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Literary Contents.

	PAGE		PAGE
Bankruptcy Reports	325	Editorial Notes:—	
British Pharmaceutical Conference:—		The Future of Pharmacy	320
Papers and Discussions		The Quicksilver Market	321
(concluded)	309	Dermatological Therapeutics	322
Committee Meetings	319	French Pharmaceutical News	324
Correspondence:—		Gazette	308
Koumiss; Tincture of Strophanthus; Discoloured Cold Cream; Bland's Pills, B.P.C.; The Wanted Stove	331	Leaderettes	323
Breakdown of the Irish Pharmacy Act	332	London Drug Statistics	330
Legal Queries	332	Marriages	324
Dispensing Notes	332	Metropolitan Reports	306
Miscellaneous Inquiries	333	New Companies	334
Deaths	324	Provincial Reports	307
		Trade Marks Applied for	330
		Trade Notes	334
		Trade Report:—	
		London	326
		Hamburg	329

OUR NEXT ISSUE will contain special information on educational matters. Secretaries of schools who have not sent us particulars of their classes should do so by Monday's post. As this issue will have a special circulation advertisers who desire to make special announcements to hospitals, medical schools, and similar institutions, would do well to take advantage of it.

Six hundred and forty thousand pounds was the sum asked for last month by several new companies connected with the chemical and drug trades.

OUR French correspondent mentions some curious inconveniences which the pharmacists of South Algeria have to encounter. Some of the phenomena are as wonderful as "opodeldoc melting to curd."

WE conclude our report of the Manchester meeting of the Pharmaceutical Conference with abstracts of the papers that were read on Wednesday, and full notes of the discussions thereon. Reports of the meetings of the Executive Committee are appended.

THE IRISH PHARMACY ACT.—Another prosecution at the instance of the Irish Pharmaceutical Society came on in the Belfast Summons Court on Wednesday. Sir James Hazlitt, Mayor a chemist and druggist himself, was one of the magistrates on the bench, and the question was argued at full length, both prosecution and defence, however, adopting rather a different line of argument to what they put forth on former occasions. After considerable discussion the case was dismissed, and subsequently the Mayor made some remarks in reference to what he thought would be the best course for both parties to adopt so as to secure a practical *modus vivendi* for the future.

THE British Association concluded its meeting in Manchester on Wednesday. It has been an exceptionally successful but dry affair. An important paper on the use of fluorine compounds as antiseptics was contributed by Mr. William Thomson on the last day.

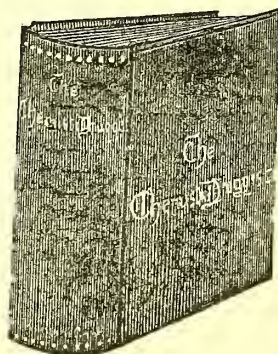
MR. STANHOPE, replying to Dr. Clark in the House of Commons on Monday night, repeated the statement that the recent Royal Warrant by abrogating relative rank detracted in no sense whatever from the *status*, precedents, or privileges of medical officers, and that there is no difficulty in obtaining qualified candidates for the army medical service.

BRITISH PERFUMERY IN TURKEY.—According to the report of the Constantinople Chamber of Commerce, British perfumery has obtained a firm footing on that market during the last few years, and its sale is still extending, mainly at the expense of French articles. Italian perfumery, which is already sold in Egypt, is now also being introduced at Constantinople; the prices are low, but the articles are not put up very tastefully.

AN EXHIBITION OF ILLUMINANTS AND NAPHTHA PRODUCTS was opened at St. Petersburg on August 27. Several prizes are offered, open to foreigners as well as Russians. Two rewards are offered by the Ministry of Imperial Domains, one of 2,500 roubles for a cheap lamp of simple construction, in which the heavy unrefined naphtha oil could be burned and which might be used in the poorer villages, and one of 1,000 roubles for a lamp of better construction to burn the same oil. The Ministry of War offers three prizes of 500 roubles each—the first for a stove for room-heating, in which naphtha refuse could be burned; the second for a useful but cheap galvanic battery for electric lighting; and the third for phosphoric substances to be used in illuminating. The exhibition remains open until November 15.

FATAL EXPLOSION IN BERLIN.—An alarming accident occurred at the "Aesculap-Apotheke" in Berlin on August 21. On the morning of that day the proprietor, Mr. Herholtz, his apprentice, and the laboratory manager were engaged in the manufacture of a large quantity of Bengal light which had been ordered for the illumination of the town-hall on September 2, the anniversary of the battle of Sedan. Eight vessels full had been successfully prepared, and the contents of the ninth vessel were being mixed on the floor of the laboratory, when through some unexplained cause a spark set fire to the mass. The apprentice escaped at once by jumping out of the window, but Mr. Herholtz and the manager remained in the apartment endeavouring to extinguish the fire by throwing sand on the mass. Both were overcome by the noxious vapours generated, and died within a few hours after the arrival of assistance.

THE reading cases which we offer to subscribers are now used by a very large number of chemists, and are found very convenient. They keep together thirteen numbers in very tidy form, always ready for reference. By having two cases in hand the numbers of a complete volume are always available until the time comes for binding. We sell these cases at the office for 1s., or by parcels post 1s. 3d., or two for 2s. 3d. We cannot forward them to any house for enclosure, nor by any of the carriers, as in the latter case we have to pay for booking.



Metropolitan Reports.

SCARLET FEVER has broken out in West and South London, and has become so prevalent as to call for special hospital accommodation.

FIRE.—A fire occurred at the Shoreditch branch of Messrs. J. Beedzler & Co. on Tuesday night. It was almost entirely confined to a packing room for "Alterative Blood Mixture" and other specialities of the firm. The kangaroo which has been so long associated with this branch establishment was a victim of the fire. The business has not been interfered with.

BEANFEAST AND SWIMMING.—The artisans of Messrs. S. Maw, Son & Thompson had a very successful outing last Saturday. To the number of sixty they went from Maidenhead to Marlow in two steam launches, "The Aldersgate Glee Union" (one of the institutions of 11 Aldersgate Street) making a merry time with their glees and madrigals. At the Greyhound Hotel the company sat down to dinner, with Mr. John Banks in the chair and Mr. H. J. Gould in the vice-chair. After dinner several toasts were given, that of "The Firm" being responded to by the chairman, who has recently returned from a successful Continental journey. A number of songs were rendered in excellent style, after which the journey up the river was resumed as far as Medmenham, where the party took the train for London. The first of a series of six competitions for a silver challenge cup presented to the swimming club of the firm by C. T. Maw, Esq., took place by special permission in the River Lea on the same day, the distance being 220 yards. After a stiff race the goal was first touched by H. Fuller (25 seconds start), the second swimmer, E. Braun (65 seconds start), being only a yard behind him.

POISONING CASES.—On Monday night Richard Hearn, a man of fifty, went into a beerhouse in the Kennington district, called for some ale, with which he mixed some *oxalic acid*, and swallowed the mixture. He was removed to St. Thomas's Hospital in an unconscious state.—The same poison was taken by Henrietta Chavey, thirty-four, a French domestic, living in St. John's Wood district, but a policeman arrived on the scene before a medical man, and poured an emetic of warm water and salt down her throat. This did its duty; the secondary symptoms were successfully treated at the infirmary, and a sum of 40l. was finally required at the Marylebone Police Court to ensure that she would behave in future.—An inquest was held at Guy's Hospital on September 2 on the body of Annie M. Perkins, aged eighteen years, who had died in the hospital from the effects of a draught of *spirits of salt* taken a few days previously. Cephalgic pains and crossed love had incited the poor girl to resort to this means of ending her existence.

THEFT BY A TRAVELLER.—At Westminster, on Tuesday, Frederick Dent, thirty-two, a commercial traveller, of 1 Morley Avenue, Wood Green, was charged on remand before Mr. d'Eyncourt with stealing twelve tablets of soap in a case and two photograph frames, value 7s., the property of Mr. Charles Digby Harrod, proprietor of stores at 101 Brompton Road, S.W. The prisoner seemed to feel his position most acutely. The evidence was to the effect that the prisoner, who was in the employ of Messrs. Yardley & Co., toilet-soap makers and perfumers, of Ridgemount Street, Tottenham Court Road, as town traveller, called at Mr. Harrod's establishment to solicit orders, and while left alone in one department he possessed himself of the articles mentioned in the charge, and walked away with them in a leather bag which contained his samples. He was given into custody, and indignantly protested that he had purchased the soap and photograph frames. Mr. Rymer (for the accused) said he was sorry that this explanation could not be sustained. This was a most painful case. Prisoner had been nine years in one situation, and had hitherto borne an irreproachable character. He had received the education of a gentleman and was the son of a retired officer in the army. He hoped his Worship could see his way to deal with the case as one of unlawful possession. The prisoner pleaded guilty, and his employer, Mr. Thomas E. Gardner, trading as Yardley & Co., said he had employed him in a position of trust since 1879, and he had had the very highest opinion of him. Witness was never more

astounded in his life than when he heard of this charge. Another witness, who gave the accused a high character, said that he had lately noticed a change in his demeanour and a weak state of health. Mr. Rymer: He cannot account for his conduct. It was an insane impulse. Mr. d'Eyncourt passed a sentence of three months' hard labour. Prisoner was removed to the cells weeping.

POISONED BY LAUDANUM.—Mr. Carttar, West Kent coroner, held an inquest on September 2, at Lower Sydenham, on the body of Annie Sophia Hoster, aged twenty-seven. Her husband, Albert Hoster, of Grove Villa, Myrtle Grove, Lower Sydenham, said deceased had for some time suffered from weakness and had been attended by Dr. Law. He and deceased lived happily together. There were no children, and she looked forward to a happier time when he had retired from business. Evidence was then given that on the previous Wednesday the deceased went to bed about ten o'clock, when the maid servant, Florence Mercer, went home, leaving the deceased in the house alone. About half-past eleven o'clock Mr. Hoster returned home, accompanied by M. Redier, a friend who was staying at Grove Villa, and after smoking a cigar for a quarter of an hour both retired to rest. On entering the bedroom, the gas of which was turned down, Mr. Hoster spoke to his wife, who held up her face to be kissed, and afterwards muttered something. A few minutes later, thinking she was ill, he rose in order to bathe her face with water, for which purpose he took a tumbler from the washstand, and observing a dark sediment at the bottom of it he became alarmed and called up M. Redier, who went for Dr. Law, who at once saw that the deceased was suffering from the effects of opium poisoning. Dr. Erskine also attended. An emetic and restoratives were applied, including a galvanic battery, but deceased never recovered consciousness, and died about eight o'clock on Thursday morning. No one in the house had any knowledge of a bottle marked "Poison" that was found on a table in the bedroom. There were medicine bottles about, but they were different in shape and had deceased's name on them. Dr. Law, however, said the bottle in question was one of two he had supplied to deceased a month before containing laudanum for sprinkling upon poultices. In deceased's weak state he thought one-fifth of what the bottle had contained—two ounces—might prove fatal. The jury returned an open verdict of "Death from laudanum poisoning."

Provincial Reports.

Items of news, and newspapers containing matters of interest to the trade, sent to the Editor, will much oblige.

BARNSELEY.

AN OVERDOSE OF LAUDANUM.—On September 1 a servant girl, about nineteen years of age, employed at the Shakespeare Hotel, was recommended to rub her gums with laudanum for toothache. Instead of doing so she swallowed twopennyworth. She was removed to the infirmary, and with some difficulty fatal consequences were averted. She stated that she scarcely knew what she was doing at the time she drank the mixture.

BILSTON.

THE NEW FERTILISER.—The Thomas-Gilchrist process of steelmaking is daily proving an increased source of wealth to the English ironmaking districts whose ores are of a phosphoric nature. The employment of the waste slag produced from the basic converters in the course of manufacture in agricultural fertilising is proving very successful. Those chemical elements which, if present in excess, are productive of much loss to the steelmaster are invaluable to the farming community. The Staffordshire Steel and Ingot Iron Company, at their works at Bilston, are experiencing such a good demand for the basic manure that they have made arrangements for doubling their present grinding plant. The company are now manufacturing 100 tons of the finest ground steel manure per week, and if their capacity were sufficient they might have orders in hand for 2,000 tons ahead.

CHORLTON-ON-MEDLOCK.

THE WRONG LOTION.—An inquest was held on September 2 on the body of Ellen Meredith, aged forty, wife of George Meredith, a plasterer. The deceased was of intemperate habits, and was in the custom of putting whisky into all sorts of bottles, in order to hide it from her husband, and on the Wednesday morning, apparently under the impression that she had got her favourite beverage, she imbibed from a bottle labelled "poison," which contained a lotion for rheumatism. Poisonous symptoms supervened, and she died within twelve hours after.

CORK.

DR. PHILIP E. CROSS was on Monday formally returned for trial on a charge of murdering his wife by the administration of poison.

LEEDS.

PRUSSIC-ACID POISONING.—William Butterfield, a hair-dresser, who lived at Bradford, but worked at Leeds, committed suicide last week by taking prussic acid. It appeared from the evidence at the inquest that the deceased had been despondent owing to his sweetheart having admonished him for getting drunk. They quarrelled; hence the suicide.

THE RESULT OF OVERDOSING.—On Tuesday an inquiry was held at Stalybridge into the circumstances of the death of Isabella Hampson Wilkinson (16), who died last Saturday from the effects of repeated doses of a mixture containing tincture of opium. The witnesses called were the mother of the girl, Dr. James Alexander Ure (a graduate of the Glasgow University), who prescribed the medicine, and Dr. Robert Hopwood, who attended the girl along with Dr. Ure when poisonous symptoms set in. From the mother's evidence, it appears that the deceased had suffered from diarrhoea, followed by severe pain in the bowels, which was not relieved by a dose of composition powder. Dr. Dickinson was sent for on Wednesday, and his assistant (Dr. Ure) attended. After his diagnosis he stated that the girl was dangerously ill, and he prescribed some medicine (dispensed by himself), which, however, did no good. Another bottle was obtained on the same day, but this also failed to give relief. On Saturday morning Dr. Ure called at her request, and told witness to give two tablespoonfuls of the mixture instead of one, and two teaspoonfuls of brandy, instead of one as before, and to administer it every two hours. Deceased got no better until one o'clock in the afternoon, when she fell asleep. She had been sleeping about ten minutes when the doctor came. He asked witness if she had done according to the directions. Witness showed him the bottle, and said, "You told me to give it from mark to mark," and he replied, "You have done quite right." He left, saying that witness was to go about three o'clock and tell him how the girl was going on. He said nothing about the medicine, and when her daughter woke up about half-past two witness gave her another double dose of the mixture and the brandy. She had not wakened before that, and a few minutes after receiving the medicine she fell asleep again. Witness went at three o'clock to see the doctor, leaving her daughter asleep. She took the medicine bottle with her and told him she had given her daughter all the medicine except one dose which she had left in a little tumbler. He said, "You have given her an overdose, and you should not have done that. The medicine was a little strong and I told you not to give it her when the pain ceased." She did not remember the doctor saying that. Witness was further examined on this point, and a bottle was produced bearing a label with the directions: "Two tablespoonfuls of this mixture every two hours until ease is obtained." She denied that this was the bottle.

Dr. Hopwood's evidence referred to the condition of the girl before her death. Dr. Ure had told him that the medicine had been continued contrary to his instructions, and when he called he found the girl cold and pulseless, with the pupils much contracted. He and Dr. Ure agreed to administer atropine hypodermically, and they went down to his surgery to get some, but found that he had only the solution mixed with morphia. This was all he had to do with the case.

Dr. Ure in the course of his evidence said that the second bottle of medicine which he gave on Saturday con-

tained $1\frac{1}{2}$ drachm of laudanum and $1\frac{1}{2}$ drachm of tincture of lavender, and water to 6 oz. It was in the bottle produced (already referred to). He told her she was to give two tablespoonfuls every hour until the patient was easier, and then to stop the medicine until he saw her in the afternoon. He also told her to apply poultices to the painful part, and to give her brandy in teaspoonfuls every hour, and soda water and milk for food or drink. He called at two o'clock and found the girl asleep, and, according to the mother, she was easier, and he asked how much of the medicine she had given her. She brought the bottle, and it contained two more doses of the medicine. He then asked when she had given the last dose, and she said at half-past two. The clock in the house was wrong. He told her to give her no more, but to bring the bottle back to the surgery, and he would change the medicine. She called at three and told him she had given another dose of the medicine. He had distinctly told her not, but to bring the bottle to the surgery. She made the remark that she had hard work to get the last dose into her. The bottle which she brought back was empty. He thought she would have understood that she was to bring the bottle and the contents. He administered atropine hypodermically, and kept on with the treatment, making numerous calls for the purpose and until she died in the evening. The coroner, in summing up, remarked that there was no blame to be attached to the doctor, and the jury returned a verdict to the effect that death was due to an overdose of medicine inadvertently administered.

LIVERPOOL.

NOVEL ADVERTISING.—The latest novelty in the way of advertising a new proprietary article to the public was seen this week in Liverpool. A medium-sized elephant, in charge of a keeper, was paraded through the main streets with a blue cloth on its back, bearing an advertisement in large gilt letters. "Salt Regal" is the article which the docile creature held forth to fame. Fritz & Co. are said to be the proprietors, but Sumner's travellers are introducing it (the salt, not the elephant) to chemists.

THE LIVERPOOL HOUSEHOLD STORES ASSOCIATION (LIMITED), of which the prospectus has been before the public during the past week, are to have drug, perfumery, and dispensing departments. The capital of the new company is 100,000*l.* in 100,000 shares of 1*l.* each. It is to be worked on the co-operative system. To ensure the quality and purity of the articles supplied, the services of Dr. Campbell Brown, County and City Analyst, have been retained. Amongst the directors is Dr. G. B. Clark, M.P. for Caithness.

PARAFFIN IN CHEWING-GUM.—A prosecution for selling adulterated sweetmeats took place at the Liverpool Police Court on August 31. The defendants were Messrs. T. & H. Toby, confectioners, of Granby Street. Inspector Baker deposed to having purchased a pennyworth of "chewing-gum" from their shop, a portion of which he had forwarded to Dr. Campbell Brown for analysis. The gum was found to contain 38 per cent. of solid paraffin, the remainder consisting of sugar and colouring-matter. One of the defendants stated that the gum was not manufactured by him, nor did he know what it was made of. Mr. Raffles, the stipendiary magistrate, remarked that he ought to have his sweets tested, as he was liable for selling them. The defendant replied that that would almost be impossible. Mr. Raffles said the gum must be very injurious to children, and the defendants had better not sell it again. A fine of 5*s.* with costs (20*s.*) was inflicted.

[The irrepressible *Globe*, commenting on the use of chewing-gum, says that it "is not confined, it appears, to boys and girls. Young men and maidens sweeten their courtships with the delicacy, unconscious of the danger they run of bringing such an inflammable substance [*sic*] into close contiguity with their ardent hearts. Picture the horror and grief of a 'young person' when her swain, lighting the manly and fashionable cigarette, suddenly bursts forth into flames and becomes utterly cremated on the spot."]

INLAND REVENUE PROSECUTION.—One September 2, at the Police Court, before Messrs. H. J. Crook and D. Hughes, Edward Richard Banner, druggist, was summoned on four informations taken out at the instance of the Inland Revenue

Commissioners for a breach of the 130th section of the Spirits Act. Mr. Squire was for the prosecution, and Mr. Stewart for the defendant. It was stated in evidence that on various occasions an officer of the Inland Revenue called at a shop of the defendant in Byrom Street, and asked to be served with paregoric on two occasions and tincture of cayenne on another. Sweet spirits of nitre were also purchased at a shop in Boaler Street belonging to the defendant, and each of the articles was found to contain a quantity of methylated spirits. The mixture of such spirits was contrary to the statutes, as by doing this the revenue was defrauded, and the buyers of the medicines did not get a proper article. Mr. Stewart, while admitting the offence, said that Mr. Banner had been in indifferent health for some time, and he was therefore unable to pay proper attention to his business. While he was absent the assistants had been in the habit of drinking the spirits of wine, which was an ingredient of the medicine mentioned, and had mixed methylated spirits with it in order that it might not be seen that the quantity of spirits of wine had unduly diminished. A fine of 5*l.* and costs was imposed in the first case, and in each of the three remaining cases a fine of 20*s.* and costs was imposed.

NORTHWICH.

NATURE ABHORS A VACUUM.—In consequence of the damage caused in the Cheshire salt district by the subsidences that have lately occurred there, a movement has been resuscitated by property-owners for obtaining compensation from the brine-pumpers. A deputation has had an interview with Mr. Brunner, M.P., who promised that he would try to get a Royal Commission appointed to inquire into the matter.

ROYSTON.

FIRE.—On Monday, August 22, a fire broke out in a cottage at the rear of the premises of Mr. E. Matthews, chemist, High Street, Royston, Cambs. Fortunately the fire was confined to the room in which the outbreak took place, which was used by Mr. Matthews as a store. The stock was partially destroyed and other portions of it damaged by water.

SCOTLAND.

EDINBURGH.

METHYLATED SPIRIT.—The sale of this article by druggists is the subject of correspondence in the morning papers here, and it is alleged by one writer that it is "no uncommon thing" for a chemist in a poor locality "to draw from 1*l.* to 2*l.* on a Sunday from selling methylated spirit alone." Another says that he "knows a druggist (one of the best shops in town) who says he sells more spirits on a Sunday than some of the High Street publicans do on a Saturday."

SCENT ABOUT HER BUSINESS.—A lady who some three or four years ago favoured certain chemists in the city with a visit is at present making a round of calls. Her favourite scent is lavender-water. She usually wants a good-sized bottle, and goes in for it apparently in a hurry, generally with one glove off, as though she just lived next door. When it is being wrapped she suddenly discovers, to her seeming great confusion, that she has "left her purse on the table, but she will just run in and fetch it, and be back in a minute." She always hesitates long enough after this statement to allow the obliging chemist to say she can have the lavender, and pay for it when she gets her purse. It is recommended that she be allowed to go for her purse without the scent. In either case it is not her practice to return.

WONDERFUL EFFECT OF INSECT-POWDER.—In the *Scotsman* a few days ago a correspondent asked for suggestions as to the best means of getting rid of ants. A writer, in reply, recommended insect-powder, which, he said, could be procured at 2*s.* per lb. from a chemist who had obtained a medal for the article at last year's exhibition. A third correspondent said that genuinely reliable powder could not be purchased at the price mentioned. The ants were quite lost sight of in the "dust" that was raised over the price. Both sides apparently proved conclusively that they were right. It has been suggested that either there was some old stock to dispose of, or that Lord Young, who is in country quarters at present, aiming at other game than chemists, was en-

deavouring to "bear" the market. Climax!—the first writer finished the correspondence by expressing his gratitude to the paper for publishing the correspondence, and said he had disposed of the ants by a dash of boiling water and a sprinkling of turpentine.

GLASGOW.

A QUARREL and fourpennyworth of laudanum were on Monday the means of bringing an end to the existence of a young woman of twenty, the wife of a sergeant of the Scots Guards.

THE INTERNATIONAL EXHIBITION which is to be held here next year is being thoroughly organised, and a Chemical Industries Committee has been appointed, with Sir John W. Cuthbertson as convener. Associated with him on the committee are Messrs. Daniel Frazer (Glasgow), E. C. C. Stanford (Dalmuir), and J. R. Young (Edinburgh), as well as others less known to pharmacy. The committee are desirous of making the Chemical Industries Section a prominent feature of the exhibition, and will classify and arrange the exhibits so as to bring out a good comparative and educational result. The Glasgow district may be said to have been the cradle of some of the most important chemical manufactures, such as bleaching-powder, bichromate and prussiate of potash, kelp working, and shale oil, and it is expected that these industries will be well illustrated. The following are the divisions of the Chemical Section (Class XII.):—*Inorganic Products.*—*Acids, Alkalies, Salts, &c.*—Paints and pigments, white lead, printing and writing inks, yeast-powders, and baking-powders are included in this division. *Organic Products.*—*Coal and Wood Tar Products, Oils, Soaps, Varnishes, &c.*—*Chemical Apparatus* (including balances, laboratory-fittings, &c.). *Pharmaceutical Products* (including perfumes of all kinds). *Optical Apparatus. Instruments (excepting Naval).*—Astronomical, biological, and meteorological; thermometers; weights, measures, and weighing-machines; spectroscopes and accessories for spectrum analysis, &c. Also *Photographic Apparatus.* Full particulars may be obtained from the General Manager, 27 St. Vincent Place, Glasgow.

NEWBERRY'S CORN PENCIL.

MESSRS. F. NEWBERRY & SONS are introducing a corn pencil which is distinctly novel. It is an ordinary cedar-wood pencil with a "lead" of a dry composition which is to be applied to the pared corn. The pencils are put up on attractive cards, and retail at 3*d.*—they should take well. It is noteworthy that, although the pencils are called "Newberry's," and are directed to be used until the corn is "quite removed," the proper authorities have pronounced them to be non-labile to medicine-stamp duty.

Gazette.

PARTNERSHIPS DISSOLVED.

THOMPSON & BEWICK, Blaydon, Durham, mineral water manufacturers.

TOMLINSON & CROWDER, Barton-on-Humber, chemists, druggists, booksellers, &c.

THE BANKRUPTCY ACT, 1883.

RECEIVING ORDERS.

BARRETT, ARTHUR JOHN (trading as Napoleon Price & Co.), Cumming Street, Pentonville, London, soap manufacturer.

MERCER, ALFRED, Lutterworth, surgeon's assistant.

NOTICE OF DIVIDEND.

MARLOW, MARY JANE (trading as J. Marlow), Lees, Ashton-under-Lyne, chemist and druggist. First div. of 3*s.* Sept. 12. 79 Mosley Street, Manchester.

T H E

British Pharmaceutical Conference.

TWENTY-FOURTH ANNUAL MEETING.

MANCHESTER, AUGUST 29, 30, 31, SEPTEMBER 1, 1887.

(Continued from page 292.)

THE Conference was resumed on Wednesday morning at ten o'clock. About eighty members were present.

The PRESIDENT, in opening the proceedings, inquired if there were any delegates present who were not mentioned and recognised on Tuesday. If so, he asked them to send in their names. He had to mention the agreeable fact that they had the presence with them of Dr. C. N. Kernot, of Calcutta. (Cheers.)

The first paper read was on

THE RELATION OF PHARMACY TO MEDICINE.

BY D. J. LEECH, M.D., Professor of Materia Medica in Owens College.

THE author explained that his intention was to discuss the influence of present and pending changes of medical views on the practice of pharmacy. The work of pharmacists in relation to pharmacy would in time differ not a little from that which now prevails. Until lately there had been but little change in the administration of medicine from that adopted in Sydenham's time. The authors of the Pharmacopoeia had not thought it necessary to search for methods of lessening the discomforts attending on taking medicine, though pharmacists had done the best they could with the preparations they had. But recently enterprising men had seen and supplied the demand for pleasanter forms of administration, and scientific pharmacists had invented better, or, at least, more convenient remedies. Thus new commercial industries had arisen which had absorbed most of the work formerly done by individuals. The materials ready for combination and for exhibition were now largely produced on a wholesale scale, and the call for these is increasing and will increase. The new preparations are welcomed partly because of their convenience and partly because their uniformity is guaranteed. Medical men prefer to prescribe such because a large proportion of them have had no practical experience in compounding—a fact of which very likely many present had seen proof. Ready-made medicines are thus usurping the place of the official preparations of the old surgery stock, and pearl-coated pills, gelatine capsules, and tabloids are used instead of the old extracts and gums. The excellence of the new preparations and the reduction of labour will more and more lead practitioners to order them, and actual compounding will be reduced to a minimum. Already less pharmaceutical knowledge is required of medical students than formerly, and some advocate that only so much acquaintance with compounding should be required as should enable a physician to prescribe. This tendency, however, will not in the end take away from, but will add to, the duties of the pharmacist.

Another influence which will affect pharmacy is the progress of knowledge as to the chemistry and action of drugs. The author then sketched the gradual advance from the old days, when infusions, tinctures, and extracts were devised, to the discovery and more general use of alkaloids and the definite principles of plants. These had been but slowly adopted because their effects were not quite the same as the old drugs, and also because they were costly and dangerous; but pharmacology, that is the study of the action of medicines on the organs and tissues of the body, had been

pursued in every country, and of late more actively than ever. So far not nearly enough was known to constitute a science of therapeutics, but it was clearly seen that in such experiments the practitioner could only rely on definite substances. The presence of a second substance might considerably affect and perhaps annul the action of the first. The dose too, it was seen, was of the utmost importance, as different, and sometimes opposite, results were obtained from different doses of the same substance. Dr. Leech then illustrated his remarks by an experiment. A pencil suspended horizontally was made to touch a drum which could be easily revolved. From the end of the pencil the muscle of a toad was suspended by a thread, and preserved in a solution of salt, in which condition it will retain its susceptibility for thirty-six hours. On revolving the drum a straight line round it was marked by the pencil. Substituting for the salt solution a solution of veratrine (1 in 30,000) the muscle was at once contracted, pulling the pencil and occasioning a very distinct curve upwards on the drum. When such an effect is produced on such comparatively coarse tissue as the muscle, we must be prepared, said the author, for very marked effects on the more delicate tissues from very minute doses of various substances—indeed, if only the cork of the vessel containing the veratrine solution were used for another experiment it would suffice to vilitate it. As an example of antagonistic action, it was stated that while barium would have an effect similar to that of veratrine, a minute quantity of potash would reverse the effect. A certain mixture of barium and potash would have no result at all.

Now it is manifest that what is true in pharmacology is true in therapeutics, and thus it is evident how important it is that definite substances should be administered in definite doses. Dunstan and Ransom have shown that the same sample of belladonna might be made to yield extracts containing from 1½ to 5 per cent. of alkaloid by varying dilutions of the alcohols used to treat it. Moreover, as Gerrard has shown, wild belladonna yields more alkaloid than the cultivated. The aconite of the North is more powerful than that of the South. Dunstan and Short have shown that the alkaloids of nux vomica extract vary from 4 to 8 per cent. Standardising the preparations enabled us to get nearer exactness, but it did not enable us to give definite doses of simple substances. Most drugs contain more than one active principle, and sometimes one of these is antagonistic to the other. The action of strychnia and brucia in nux vomica, for example, is by no means similar; the methyl-coniine in conium paralyses the spinal cord, while conine acts on the ends of the nerves; the physostigmine of calabar beans paralyses, while the calabarine stimulates, the spinal cord; digitalis contains three alkaloids [principles?], which act on the heart in quite different manners; jaborine has a directly opposite effect to pilocarpine. It is no wonder, therefore, that physiologists cannot get certain results except from definite substances, and it is felt by physicians experienced in medical treatment that many of the failures to produce the same results as shown by experiments are due to a want of definiteness in the remedies employed. This consideration leads medical men to turn to those large houses in America and Germany, as well as in England, who guarantee the definiteness of their preparations. If, then, pharmacy is to hold its own in the future, each pharmacist must be the guarantor as

well as the distributor of the medicines he dispenses—a condition which will in the future involve more and more knowledge, especially in organic chemistry. The rise of pharmacy to a higher state, or its fall to a lower one, will depend on whether the scientific functions required are accepted or declined.

The PRESIDENT said he was sure they would accord a more than usually hearty vote of thanks to Professor Leech for the extremely admirable and suggestive paper he had presented to them. (Cheers.) They felt very much indebted to Professor Leech for leaving his work and coming there that morning to give them that paper. (Cheers.) He thought he could promise Professor Leech this—that they would ponder the paper very carefully and deliberately in after-days. (Hear, hear.) He himself did not know when he had been so deeply impressed with the importance to pharmacists of endeavouring to provide for the medical profession drugs and chemicals, especially alkaloidal principles, of purity and of definiteness. (Cheers.) He had been deeply impressed, and he was sure they all had, by the experiments which had been presented to them. If these infinitesimal doses of active principles produced such marked results as had been shown beyond contradiction, it surely behoved them in the special duties they had to fulfil in the obtaining, preparation, and presentation of medicines for the medical profession, to do their very best, and he felt that no paper could have been more germane to the work of the Conference than a paper of this type. (Cheers.) He hoped they represented—it certainly was their *raison d'être*—the higher cultured side of pharmacy. To that point Professor Leech had called marked and deserved attention. Their future must largely depend upon their capacity and their willingness to fulfil the special functions which in the differentiation of work with regard to medicine and the cure of disease they were called to fulfil. In their name he accorded a most hearty vote of thanks to Professor Leech for his paper. (Cheers.)

Mr. BALKWILL asked whether the extremely small quantities of matter that operated on the muscle would represent the amount of medicine which would be circulated in the blood, and so reach the muscle through the capillaries.

Mr. MOSS said the President had so well expressed their feeling on the paper that little was left to be said by others. What occurred to him on seeing the experiments performed by Professor Leech was that, provided he and others of his profession did succeed in getting preparations of this character absolutely uniform and dependable, such as they would always try to produce, it would be necessary for Professor Leech or his profession to weigh their patients. (Laughter and applause.)

Mr. GERRARD was able to corroborate a great deal of what Professor Leech had said, not from his own experience, but from the experiments of others with whom he was associated. That was to say, he had been largely engaged in the making up of solutions for physiological experiment, and from time to time those solutions had been returned to him, although the substances used were from the same bottle and weighed with the same balance as solutions which were not complained of. The most fractional part even of acid in excess had been found to make considerable differences in the result of the physiological experiment, and he knew this was so often the case that check experiments had had to be made to neutralise such results as were produced by a slight excess of acid which they were occasionally obliged to employ to get their alkaloids into anything like presentable solution. Even the exposure of distilled water to air for a few hours before making the solution would make a difference in the results of the physiological experiment. There was no doubt their aim should be as far as possible to obtain preparations of a standardised character, and especially with alkaloidal preparations. They were preparations in which they could get to a great extent measured results. As had been mentioned by Professor Leech, the effect of these preparations upon the strength of the muscle must be taken into consideration. They had to deal with weak and strong muscles, and he should like to know whether there was any means of finding out with any amount of accuracy the relative strength of muscles.

Mr. SCOTT said the discourse to which they had listened was, as the President had told them, peculiarly appropriate

to their meeting and to the particular phase through which medical pharmacy was now passing. They stood upon the threshold of almost a new departure from the old system of medicine, under which they dealt in drugs by the pound and in draughts by the gallon. Now they were seeking to take the spirit of their preparations and give them in a simple and pure form instead of in a complex and impure form. He was very much pleased to find that Professor Leech impressed on the members of the Conference the necessity of looking out for very small differences in the quality of alkaloids and the more important glucosides. He could see that the action upon muscles in the beautiful way in which Professor Leech had exhibited it to them would enable them to get over some of the difficulty which had been forced upon English scientists by the operations of the Vivisection Act. If they crossed the water and went abroad there was no difficulty whatever in trying the effect of any peculiar substance—alkaloid, glucoside, or whatever it might be—on the animal economy, alive or dead, and the matter of pain was not taken into account at all. He was not going to argue that vexed question now, but he hoped the members of the Conference would take to heart Professor Leech's observations and experiments, because he had shown them how to obtain effects on dead muscle that their *confrères* abroad could obtain on the living and suffering body. He was pleased to note the tone of Professor Leech's discourse. It might be regarded in some sense as the thin end of the wedge whereby medical men and pharmacists might shake hands, to the benefit of the medical profession on the one hand and suffering humanity on the other. A London lecturer the other day also struck out a new departure, and left the usual out-and-dried hospital subjects, by showing his students how much, they were indebted to the labours of pharmacists in producing for them new drugs and new and better preparations of the old ones. He prophesied that the paper presented to them would have very great results in the future.

Mr. JOHN WILLIAMS said he had listened to the paper with great interest. He might add to it that it was in the direction in which he believed modern pharmacy was striving to follow. Their effort, he thought, was to bring everything to a certain and absolute condition, not only of purity, but of standard strength and power, so that medical men might know what they were really using, and not have to rely upon the reputation of even great houses. He might illustrate that by reminding many present that photography, an art which had gone, they might say, side by side with medical practice, had shown them how important this question was. Photographers had really been in advance of medical knowledge in discovering the purity of the chemicals they were using. He dared say it had been an observation of many present that photographers had found out and condemned a chemical long before medical men had been able to do so. (Laughter and cheers.) That encouraged them to make progress in improving their processes so as to get more like standard conditions, and he trusted the time would come when medicine would be as certain, and the operation of drugs and chemicals on the human system be as well understood, as they were now in a more mechanical way in connection with such things as photography and like branches of knowledge. (Cheers.)

The PRESIDENT said he was sorry that the time necessitated the closing of the debate. He called upon Professor Leech to reply.

Professor LEECH said that this was a somewhat striking experiment that he had shown, and he had heard the word "infinitesimal" used. But it was no more infinitesimal than the action of one-thirtieth of a grain of arsenic on the human body. Most minute quantities of drugs did act on the body, as had long been known. They did not go to billionths, but with thousandths and tens of thousandths he had no doubt the effect could be traced. With regard to the effect on the capillaries, this would be to a man a good big dose. It was 1 in 30,000, or about 1 grain in 4 pints. There were 13 pints of blood in the body, and if they gave a man a grain of veratrine they would kill him probably. As to weighing patients, in pharmacology they had, in fact, to weigh them. They weighed their frogs and their dogs. (Laughter.) Indeed, they should have to consider not only the weight of the patient, but they had to weigh his peculiarities—(laughter and cheers)—and they would find that the effect on different muscles would be one of the peculiarities, for there

was no doubt that in health they would get on in a different way than they did in disease. Pharmacology was not the effect of these drugs in health, but in disease. It was a curious thing that at times their frogs had fever, and at times an epidemic came and the drugs did not act in the same way. They had sometimes to take their temperature: they had to consider all the influences in these experiments, and so they should have to consider them at a future time in therapeutics. He wanted to strengthen the hands of those who were pressing forward as far as they could to improve the character of drugs. He knew it had been done in a large way; he knew a great effort had been made, and his paper would fulfil its purpose if it in any way helped in that direction. (Cheers.) It had been said, and very truly, that photographers had been before them. His feeling was that demand led to supply, and his purpose was to show that there was an increasing demand for purity of drugs. (Hear, hear.) In a concluding sentence he invited the members to inspect the laboratories of the college.

The next paper read was on

THE ESTIMATION OF SMALL QUANTITIES OF SALICYLIC ACID IN WINES, ETC.

WALTER H. INCE, A.I.C.

[Abstract.]

In this paper the author showed that salicylic acid must be extracted in a perfectly free and practically neutral state, else the delicacy of the usual tests employed is lost. The object of the paper was to show how the difficulty in doing this might be overcome. He found that distillation in a current of steam is a satisfactory mode of extracting a definite quantity of the acid from a definite volume of wine or similar body. Various tests were tried, such as the following:—

(1.) *Ferric Chloride*.—A good general reagent, but apt to mask colour-reactions, not being in itself colourless. It is, besides, unstable and liable to decompose into hydrochloric acid and colloidal ferric hydrate.

(2.) *Millon's Test*.—Acid nitrate of mercury. Result: red colour, delicacy the same as ferric chloride—1 in 800,000 to 1,000,000.

(3.) *Hypochlorite of Sodium*.—Gives a blue coloration.

(4.) *Bromine Water*.—Gives a white crystalline precipitate.

(5.) *Ferrocyanide of Potassium*.—Tested for hydrocyanic acid, blue coloration.

(6.) *Cupric Sulphate*.—Affords a green coloration.

(7.) *Potassium Permanganate*.—Added to acid solution—decolorisation.

Taking all these on their merits, the author decided on adopting the two first, namely, ferric chloride and mercuric nitrate, as indications in conjunction with distillation; and the method of estimating which he recommended is to distil 210 c.c. of the wine acidulated with 10 c.c. of diluted sulphuric acid, and collect the second and third 50 c.c. of the distillate. The two latter portions are treated either with a 10-per-cent. solution of mercuric nitrate in diluted nitric acid and warmed on a water-bath, or with a definite quantity of dilute ferric chloride solution (sp. gr. 1.001), the colours obtained in either case are compared with varying quantities of standard salicylic acid solution with 50 c.c. of pure water treated in exactly the same manner. As only one-eighth of the salicylic acid distills over the results in c.c. are multiplied by 7.69.

The standard acid consists of a solution of 2.4 grammes of pure salicylic acid in 1 litre of distilled water; 1 c.c. of this (when 210 c.c. of the wine is used) is equivalent to .1 grain of salicylic acid per pint.

The PRESIDENT, in thanking Mr. Ince, said he might venture to add the remark that they wished him success in the continuation of his scientific studies on the Continent, and hoped to be furnished with the results that followed the pursuit of those studies.

Mr. REYNOLDS said that he was under the impression that the use of salicylic acid was dangerous, but in France there might be a certain amount permitted in wines. If so, perhaps Mr. Ince would tell them what the amount was.

Mr. SCOTT asked whether the author in distilling used the wine in its ordinary condition, or whether he took the pre-

caution of adding in the first instance some alkali in order to fix the salicylic acid, disengaging it afterwards. He had had some experience in the examination of wines, and his best results had been attained by adding hydrate of barium to the wines, getting rid of the alcohol, and when they had been reduced to a smaller consistence, disengaging the salicylic acid by sulphuric acid, and then applying a current of steam. This gave a very accurate result.

Mr. GERRARD asked whether Mr. Ince observed any decomposition of salicylic acid in distilling with steam.

In replying Mr. INCE said he believed that a health committee which met in Belgium at the beginning of this year decided that salicylic was detrimental to health, and therefore no amount was allowed to be used. But of course they had many adulterations that were not allowed. The peasants especially added the acid to their wine for their own consumption. No alkali was added to the wine originally, because if absolute alcohol was distilled with salicylic acid the whole of the alcohol distilled over, and not a trace of acid was found in the distillate till the alcohol had distilled over. A slight decomposition might go on during the distillation in steam, but as the whole of the experiments were based on allowing for that, if even half the salicylic acid were destroyed and half came over, the half being checked by a pure wine, the results would be the same as if no salicylic acid distilled over. (Cheers.)

The next paper read was a

NOTE ON THE TESTING AND PURIFICATION OF HYDROCHLORATE OF COCAINE.

BY JOHN WILLIAMS, F.C.S., F.I.C.

[Abstract.]

THE process of purification consists in dissolving the hydrochlorate of cocaine in as little absolute alcohol (s.g. .795) as possible. To the solution six times its volume of pure ether is added, and the mixture well shaken. In the course of ten minutes the purified salt separates in small crystals. Both the alcohol and ether must be as pure as it is possible to make them. The crude [impure] cocaine which is imported from South America may be purified by dissolving it in alcohol, adding hydrochloric acid to neutrality, or very slight acidity, then the ether as described. The principle of the process is that the ether retains impurities in solution. Consequently, if a weighed quantity of the alkaloid or salt is operated upon, and the amount of purified hydrochlorate compared with it, the loss in weight shows how much impurity, if any, is in the sample. The ether may be examined for the impurities.

The PRESIDENT, in thanking Mr. Williams for his paper, said one thing they always noticed about Mr. Williams was the modesty with which he presented his work to them. A more valuable moral, or application to a discourse—regarding Professor Leech's observations as a sermon, and Mr. Williams's paper the application of it—could hardly be more properly rendered. (Hear, hear.)

Mr. SHEPHERD asked what was the best method of keeping cocaine solution for application. He had had occasion to dispense a great deal within the last two years, and had found cocaine kept in water—10-per-cent. solution—became muddy in a few days. He had lately dispensed it with camphor mixture, and found it better than with pure water. But even then, after being kept a week or so, it became turbid. He had a friend in Chester who used this 10-per-cent. solution for neuralgia in the jaw, and attributed his existence to it.

Mr. THOMAS CHRISTY said that if pharmacists here would gather from Mr. Williams how to treat the enormous quantities of cocaine that came from Peru and Bolivia it would save it from having to take a journey to Germany, as it did at present. Almost all the cocaine went to Germany to be purified. If Mr. Williams's plan could be followed, English pharmacists could purify it themselves.

Dr. SYMES said his experience of cocaine was that when it was first obtained the muriate was something more basic in character than now. Whenever they got a medicinal substance, and found it of value, they endeavoured to refine it, or make it more elegant. That was the tendency, and just occasionally they overstepped the mark. For instance,

they could get as a commercial article cocaine hydrochlorate in a much more crystalline condition than it was originally, and he believed it was due to the fact that the salt was slightly neutral or acid, and the extent to which it was acid certainly made it less effectual. For some time it was thought useless to apply cocaine hydrochlorate to other than a mucous surface. But it had been found that, if they first washed the skin with a little carbonate of soda, the hydrochlorate became effective. He should like to ask Mr. Williams whether, taking the basic hydrochlorate, and treating it in his way, the cocaine, which was very soluble in ether, would not be lost, and whether its medicinal value would not be impaired to the extent to which he took out any free cocaine present in the sample. He had had some experience of the hydrochlorate, and he found that a fairly pure article was obtainable in the market of a standard quite equal to the knowledge of its application. Where cocaine hydrochlorate failed very often was in the application of it. Dentists complained of it more frequently than medical men, because it was difficult to bring it in contact with the nerves. Unless it was deeply injected hypodermically, it had very little effect on the nerves they merely to deal with. Pharmacists should not condemn it merely because they got a complaint now and then. For instance, on one occasion he had a serious complaint against cocaine hydrochlorate which was sent to South America. In fact, they ceased to use it, and refused to use it any further until he could assure them it was pure, although the same article was used in pharmacy here and was producing very satisfactory results.

Professor TICHBORNE said he had listened with considerable pleasure to the paper, and he agreed with the author that the qualities in the market were very variable. He asked whether Mr. Williams had come to any conclusion as to what the peculiar mousey smell was? It was evident that there was some volatile alkaloid remarkably like coniine present in commercial samples of cocaine. With regard to keeping it in solution, he recommended the use of salicylic acid. Some serious effects had been produced by the use of muddy solutions of cocaine, due to the fungoid growth, which appeared in two or three days. He found that camphor water would not keep cocaine solution, and when the fungoid growth was once produced, it was not a matter of strength, it was possibly a matter of danger. If the solutions were slightly acid, they would keep well, but he laid special stress on salicylic acid.

Mr. MAEEN remarked that some samples of the article were much more amorphous than others. He had asked a medical friend to take note of the action of crystallised and amorphous cocaine, and, as a matter of fact, he had not found any difference, although they differed very materially in appearance.

The President, in calling on Mr. Williams to reply, specially thanked Professor Tichborne for his remarks.

Mr. WILLIAMS then replied. He should not like to speak on the keeping of preparations of hydrochlorate of cocaine. It was true that crude cocaine at present did go to Germany and came back to England in a more or less finished state. His effort was to show that they could do without that process, and that English manufacturers and even an ordinary retail pharmacist could perform this operation so easily that they could purify their own cocaine. Dr. Symes remarked that probably some of the cocaine was lost, and also spoke upon acidity. Now even if a hydrochlorate of cocaine containing free acid was used, the whole of the acid was retained in solution in the alkaline ether. He could only say that if a pure sample of hydrochlorate of cocaine was taken—he had tried the experiment over and over again—if 100 grains were taken, dissolved in absolute alcohol, and precipitated in absolute ether, there was not the loss of one grain. (Cheers) What was lost if a commercial or comparatively impure hydrochlorate of cocaine was precipitated was really what ought to be lost—impurity. (Cheers.) He also thought that if they were to test some cocaine which had been purified in the way he had described (and which was going round the room) with litmus-paper, they would find it perfectly neutral, and it could be used for every purpose without the slightest hesitation. They were told by one gentleman that the ordinary commercial hydrochlorate of cocaine in the market was very good. He quite agreed with that. He was not

saying a word against it, but still he thought, as Professor Tichborne had mentioned, as it was known to vary, there was no reason why they should not bring it up to one standard (hear, hear); nor any reason why methylated ether should not be used. The odour of the methyl went off, and he did not think it made the slightest difference to the ultimate result.

Mr. TINGLE then read a paper entitled

PHARMACEUTICAL NOTES ON SOME SYNTHETICAL COMPOUNDS RECENTLY INTRODUCED INTO MEDICINE.

BY H. HELBING.

[Abstract.]

In this paper the author described the physical and chemical properties, simple but reliable tests, medicinal uses, and gave the formulæ of the following chemicals, recently introduced:—

Acetphenetidin	Hypnone
Amylene hydrate	Methylal
Antifebrin	Naphtbalene
Antipyrin	Salol
Antithermin	Sozolic acid
Aseptol	Tballin
Betol	Urethan
Ethyl bromide	

Specimens of these, with mixtures, capsules, tablets, &c., prepared from them, were exhibited, and the prescriptions for preparations of a compound character were given. The more important of these are appended to this abstract. The author then proceeded to comment upon the difference between German and English pharmacists in relation to these synthetical bodies. He maintained that all German pharmacists and medical men are perfectly familiar with them, their chemical characters and medicinal uses—a statement which he could not make on behalf of English pharmacists and medical men. This opinion he had arrived at from his own observation as well as from information supplied to him by the makers. For example, the patentee of antipyrin represents that of every 500 oz. of that body which he makes, not 1 oz. is sold direct to England. Mr. Helbing therefore expressed his surprise that, as English chemists are so greatly interested in standard medicines, they do not more readily adopt such as these, which are the beautiful of exact medication.

The following are some of the formulæ given by Mr. Helbing:—

Amylene Hydrate Mixture.

Amylene hydrate	3j.
Ext. glycyrrhizæ	3j.
Aq. ad	3i.

M.

To be shaken before use. For a single dose.

The liquorice covers the taste of the amylene hydrate admirably.

Antifebrin Mixture.—Antifebrin is given in powders, in doses of 2 to 10 grains. The following is a good formula for a mixture, which is very pleasant to take:—

Antifebrin	3j.
Brandy	3ivss.
Dissolve and add	
Distilled water	3vj.
Simple syrup	3vj.

M.

One tablespoonful for a dose.

Antipyrin Mixture.—Antipyrin has not an unpleasant taste. It is given in doses of 15 to 30 grains for adults, and 3 to 12 grains for children, to whom it is especially suited, as it has certain advantages over quinine. They take the following mixture readily:—

Antipyrin	gr. 80
Raspberry syrup	3j.
Water to	3iv.

Two teaspoonfuls for a dose.

Betol Bougies.—These are used for gonorrhœa, and are made by adding 4 parts of melted cacao butter to 1 part of betol and casting into the proper shape.

Hypnone is best dispensed in capsules. One grain of the remedy is dissolved in 10 minims of oil of almonds, which prevents unpleasant effects. This is a dose.

Naphthalene.—The unpleasant tarry taste of this compound is overcome in the following formula:—

Naphthalene	30 grs.
Sugar	30 "
Oil of bergamot.. ..	1 drop

Mix, and divide into 10 doses.

The PRESIDENT said they were indebted to Mr. Helbing for his paper and for the specimens he had submitted. With regard to his moral—the different course pursued by medical men in Germany from the course pursued by the medical men of England—that was a point on which they could offer no comment. But it was a matter of interest to have information and to have the specimens. (Cheers.)

Mr. COLLIER said that several of the compounds mentioned by Mr. Helbing had been employed at the hospital to which he was attached, and they did not seem to possess all the properties attributed to them. He had at the present time some of these things in his cupboard, which he supposed would never come out till the porter went to clear them away. The last thing they had was antifebrin; then there was kairin—all were used for a short time and then dropped.

Dr. SYMES observed that the reproach that these things were not appreciated in this country ought not to go forth unchallenged. He did not wish to discount the value of their being brought forward that morning, but at the same time nearly the whole of them were very largely used in this country, although they could not endorse all that was said as to the effects they produced in the first instance. He thought it was due to English physicians to say that they had shown that antifebrin had other properties than those which were first attributed to it. He thought it possessed anæsthetic properties. Pharmacists were quite ready to supply these new remedies as soon as they had an authoritative opinion on their uses. (Cheers.)

The PRESIDENT said that no questions had been put to Mr. Helbing, and it would not be necessary to ask him to reply.

The following paper was then read:—

NOTE ON CAMPHOR OIL.

By PETER MACEWAN, F.C.S.

SOME years ago the volatile oil which is obtained in Japan as a by-product during the manufacture of camphor was introduced into this country as a therapeutic agent, and I had the opportunity of examining a specimen which had been presented to the Pharmaceutical Society, and found that it did not contain camphor. Afterwards Mr. John Moss communicated a paper to this conference, in which he gave analytical results of a number of samples of the oil, showing that it is of a very variable nature. A wish expressed at that time for a complete analysis of the oil was very shortly satisfied in the paper communicated to the Chemical Society by Mr. Yoshida, a Japanese chemist (*Journ. Chem. Soc.*, October, 1885, p. 779), who showed that the oil consists of two hydrocarbons boiling at 156° C. and 172–3° C., camphor (about 23 per cent.), and an oxygenated oil, *camphorogenol*, which through the influence of heat or oxidation changes into camphor, thus accounting for the deposition of camphor in the oil through age. The oil is still used to a considerable extent, and large quantities are imported into the United States, where, it is stated, its principal use is as an adulterant of essential oils, especially peppermint oil.

I have examined numerous samples of the oil during the past two years, and have been struck with the great range of quality which they exhibit. Some are almost colourless, others very dark, and their other physical characters show great variation, as may be judged from the figures which are given below. In the discussion on Mr. Moss's paper there was some doubt as to the cause of the dark coloration of some samples, but that point is cleared up by Mr. Yoshida.

The colour is not due to the tins in which the oil is imported, but to the heat which it is subjected to; in other words, the dark oils are residues, and their quality may be judged by the following results:—Sample A.—A dark brown oil with a perceptible green shade. Sp. gr. 0.960. A measured volume fractionated gave no distillate below 180° C., the fractions were—

180°–190° C.	21.5 per cent.	Sp. gr. 0.915
190°–202° C.	<i>nil</i>	
202°–210° C.	22.0 per cent.	Sp. gr. 0.945
210°–225° C.	28.0 "	" 0.977

The residue had a specific gravity of 0.998, and was quite free from camphor, so were all the fractions. As camphor begins to distil about 200° C., it is evident that the oil contained none. Sample B was of a curious character. It was like A in appearance, but was heavier (sp. gr. 0.995). It was heated for some hours far above the boiling point of camphor, but not a drop of distillate was obtained. I have examined other samples of a similar character with the same results, the inference being that high specific gravity and dark colour are indicative of absence of camphor. The following results were obtained with samples of a pale colour. C was a water-white oil, D and E of a pale straw colour, and F was amber-coloured. Their specific gravities were:—

C 0.926; D 0.933; E 0.922; F 0.974

They gave on distillation the following results:—

C		D	
140°–150° C.	4 per cent.		
150°–173° C.	32 "		
170°–190° C.	30 "	175°–192° C.	38.5 per cent.
190°–202° C.	6 "	192°–202° C.	31.5 "
E		F	
150°–178° C.	18.5 per cent.		
178°–190° C.	40.5 "	180°–195° C.	7.5 per cent.
190°–202° C.	10.0 "	195°–205° C.	20.0 "

In each case camphor began to distil at the highest temperature noted, and the residues on cooling contained crystals of camphor, and were of a brown colour. None of the fractions yielded crystals of the camphor on cooling to 0° C. The specific gravity of the distillates between 150° and 178° varied from 0.886 to 0.892, and between 170° and 195° from 0.901 to 0.921, this variation being due to the distillate being more abundant at the beginning or end of the fraction. I did not find it possible to estimate the amount of camphor in each oil, obviously that is not possible by heating, as the camphorogenol would be changed in the process; but I may say that sample C gave the most abundant distillate of camphor. Sample F should be compared with A and B both as regards its fractions and specific gravity. It is evidently a mixture of such an oil as D and a residue oil, probably with some camphor added to it: some weight is added to the latter suggestion by the fact that a higher temperature than in other cases was required to distil off the camphor. C is an excellent oil, better in appearance than any other, and evidently more carefully prepared.

It is desirable that camphor oil should be brought to some state of uniformity before it gets into the hands of the retailer, and to do this the dark and heavy oils should be excluded, as suggested by Mr. Moss, the rest bulked and submitted to distillation so as to get rid of all that will distil below 170° or 175° C. This distillate would be very suitable for varnish-making. I observe that a paper on camphor oil was recently contributed to the Massachusetts Pharmaceutical Association by Mr. E. C. Marshall, who comes to the conclusion that the oil supplied by wholesale druggists in the United States contains no camphor, having arrived at this opinion by simply cooling the oils to the freezing-point of water. This is not a conclusive test; the oil must be distilled in order to get a true idea of its worth, and the results should be judged in connection with the specific gravity. If it contain the lighter hydrocarbons it is evident that it has not been subjected to prolonged heating in order to get all the camphor out of it, and these light hydrocarbons are the better solvents of camphor, so that they prevent its separation on freezing.

Samples A B D and E were taken from the tins in which they were imported. I am indebted to Mr. Moss for them. C and F are oils as supplied to retailers.

The PRESIDENT conveyed the thanks of the Conference to Mr. MacEwan, and stated that the note, although short, was an extremely valuable one, and essentially a pharmaceutical one.

Mr. MOSS noticed in Mr. MacEwan's paper that he suspected a certain oil to have had solid camphor added to it. He did not quite follow the author's reasons for holding that opinion, and he could hardly imagine that it was correct, seeing the value of camphor was about four times the value of camphor oil. It might be interesting to the meeting to know that tremendous quantities of this oil were imported into Europe for distillation and found their way into various industries. The endeavour made some little time ago to make camphor oil general in pharmacy had only been partially successful. The bulk of the oil came from Japan, and thousands of cases came over here, or went to the German oil distillers and were there subjected to cold to extract the camphor, and then distilled. The lighter oils were used chiefly for making varnishes, drying paints, and things of that sort, and he believed an enormous quantity came to this country for that purpose. The next heavier oil was almost identical with the natural oil of sassafras, and was put in the market as saffrol. A great deal of it was used for soap-making. He was informed by a chemist not long ago that he had extracted from the heavier oil a considerable quantity of eugenol. The proportion of eugenol he had been able to produce was something quite marked. He did not believe in Yoshida's camphorogenol, but thought it was simply the lighter hydrocarbons which underwent a process of chemical change and produced the camphor in oil which had been deprived of camphor.

Mr. MACEWAN, in reply to the question regarding the addition of camphor, said the point was explained in the paper, but as he read a very short abstract he eschewed all figures. The oil to which he said camphor had been probably added was of a very high specific gravity. The camphor distilled at a few degrees higher temperature than in the case of oils which he believed to be ordinary pure oils. For these reasons he suggested that camphor had been added to it, because otherwise they could not explain the abnormal figures given in the paper.

The next paper read was on

SOME FUNDAMENTAL ERRORS IN THE PHARMACOPŒIA.

By C. R. C. TICHBORNE, LL.D., F.I.C., &c.

[Abstract.]

THE author stated that this paper was written for the meeting of the British Medical Association in Dublin, but he afterwards thought that it would be better to bring it before a meeting of pharmacists rather than medical men. After quoting several well-known errors, he explained that the errors which his paper particularly referred to were in the graduation of vessels used for volumetric analysis. Imperial measures of all kinds are directed to be graduated at 62° F., but the Pharmacopœia states that the measures used for volumetric purposes should be graduated at 60° F. As will afterwards be shown, this difference brings in an important error; and in this belief Professor Tichborne had written to the Standards Department and also to the General Medical Council calling their attention to the matter, and they had thought it sufficiently serious to require looking into. He also called attention to his correspondence with Mr. Chaney of the Standards Department in regard to the weight of the fluid gallon at 60° F. and 62° F. respectively. Professor Tichborne had found that a gallon measure graduated at 62° F. held at 60° F. 70,011 grains of water, and Mr. Chaney found that a brass gallon vessel held 70,008.5 grains at 60° F., and a similar glass vessel 70,010.45 at the same temperature. It was also shown that the temperature 60° F. bears no relation to the gramme weight which is taken as the weight of 1 c.c. of water at 4° C. (39.2° F.). If foreign metric vessels are used, the error in working is of course appreciable, as the measures are graduated at 39.2° F., and working is done at 60° F.; for example, 1 litre of oxalic acid solution contains not 66 grammes in 1,000 c.c., but 66 grammes in 999 c.c., and in estimating hydrocyanic acid with nitrate of silver solution the error adds 0.12 per cent. to the result.

The PRESIDENT said Professor Tichborne had conferred a great obligation on the Conference in reading the paper there instead of giving it in Dublin. It was a striking confirmation and application of the principles laid down that morning by Professor Leech. They thanked Professor Tichborne very heartily for his valuable contribution. (Cheers.)

Mr. A. C. ABRAHAM corroborated Professor Tichborne's observations.

Mr. SCOTT thought he could offer some little degree of hope for the future. When the Pharmacopœia first appeared there was a howl of criticism from all quarters of the British Islands. Various corrections had now been officially made, and although the original editors and promoters were the first to bring forward such a book, they had to admit some fundamental errors. Possibly the discussion on that paper would induce the Medical Council to make good use of pharmacists for the next edition. They had a very valuable man in Professor Attfield, who, he felt sure, would keep them right in future editions. With regard to the smallness of the error, there was one thing Professor Tichborne had not mentioned, which rather accentuated his observations—if they had only a small error to begin with, it would be increased in the course of volumetric work.

Professor Tichborne said he had two objects in bringing this before the Conference—one was that the subject should be thoroughly ventilated and investigated before the next edition of the Pharmacopœia. He was quite sure that some agreement or line of agreement would have to be struck out for their guidance. Now that attention had been attracted to it he was sure that it would not remain exactly as they had it, and it would be well cared for in the hands of Professor Attfield. At the same time they liked to get credit for their own observations, and he thought it well to put the matter on record, which was his second object, although it had been communicated to the Pharmacopœia Committee and, he supposed, would be endorsed for consideration at the next meeting.

A paper was then read on

A SPURIOUS CUBE.

By WILLIAM KIRKBY, F.R.M.S.

[Abstract.]

THE fruit which was described in this paper is a berry supported on a non-articulated stalk. The globose head is flattened on the top, with sometimes a slight elevation at the apex; the base is suddenly contracted into the pedicle, which is stouter than that of true cubebs, and is laterally compressed. The colour of the berry is dark brown, and the odour after bruising is camphoraceous and cajuput-like. The author described the result of a microscopic examination of the berry, the description being illustrated with drawings. In structure the drug differs from true cubebs in having stone elements in the epicarp, in having more than four rows of cells in the mesocarp, in the endocarp having isodimetrical stone cells in more than one row, and not radially extended; in having larger crystals of calcium oxalate in the mesocarp; in having round starch bodies in the perisperm, and in the oil giving no colour-reaction with sulphuric acid. Its unusually large size distinguishes it quite readily from true cubebs, and when in powder the starch-granules, which are small, angular, and with a distinct central hilum, form the best characteristic.

The PRESIDENT said the paper strikingly illustrated the value of the microscope when brought to bear on pharmacy. They thanked Mr. Kirkby, whose reputation was not confined to the North of England, but was well known at Bloomsbury Square.

Mr. HOLMES remarked that they were much indebted to Mr. Kirkby for having placed in their hands the means of detecting the adulteration of cubebs. Of late years the drug had become very scarce, and not only had it been adulterated, but several substitutions had been offered in the market. One of these produced rather dangerous symptoms in persons to whom it was administered. A second one was not known to possess injurious properties, and the third one, which Mr. Kirkby had brought before them, they knew nothing of with regard to its properties. Should it prove to be injurious they

were now in a position to detect its presence. With regard to the cubebs at present in commerce, they were nothing more or less than a mixture, which ought to be carefully picked. As to the *crassipes*, he was not sure whether it should be classed as *crassipes* or not. He had placed on the table a sample of the original cubeb and also one of the *crassipes* for the museum, so they would be able to judge of the difference between them. (Cheers.)

Dr. SYMES said this subject possessed considerable interest. They had felt that if they got cubebs and ground them they had the best cubeb powder that could be supplied. The scarcity of the drug and the dearness of it had, he believed, caused persons who formerly ground it to buy it in smaller quantities ready ground. There was an old way of examining the drug—triturate it with a little water in a mortar, and gritty matter would be found in many specimens. He had failed lately to find a specimen in which there was not much silicious matter. A specimen from a respectable house recently contained as much as 12 per cent. of ash. He had been able to wash out the sandy matter by merely triturating the powder with water and pouring it off two or three times. It was far better that they should look after this matter than leave it to the public analysts. (Cheers.)

Dr. THRESH followed with an abstract of a paper entitled

A CONTRIBUTION TO THE CHEMISTRY OF THE NITRITES AND OF NITROGLYCERINE.

By G. ARMSTRONG ATKINSON, M.D.,

Late Demonstrator of Materia Medica in the University of Edinburgh.

[Abstract]

AFTER a brief historical *résumé* the author described the characters of the nitrite group. Nitroglycerine was mentioned as a trinitrate of glyceryl, as was also the highly important discovery by Hay, that in the alkaline fluids of the body this nitrate becomes largely reduced to nitrite. It was further stated that the action of nitroglycerine is not altogether to be explained by this decomposition. The instability of nitrous acid was referred to, and it was shown that it is unsuitable for internal administration, although when so given it is partially absorbed from the stomach being able to replace carbonic acid in the bicarbonate of sodium in the blood, and also it can convert part of the phosphate of sodium in a solution of that salt into acid phosphate of sodium, and form at the same time some nitrite of sodium. Nitrites of potassium and sodium were mentioned as readily soluble in ordinary menstrua, and as being quite stable in their solid form or in solution in the absence of acids chemically stronger than nitrous, and of ferments. The double nitrite of potassium and cobalt is of little therapeutical importance. Nitrite of ethyl and the spirit of nitrous ether were briefly treated, especially in regard to the presence of nitrates in the spirit, which is shown always to contain traces, and in old specimens considerable quantities of nitric acid, free or combined, as much as 1.5 per cent., calculated as hydric nitrate (HNO_3), being found in very old samples. The presence of the nitrate was ascertained by a combination of Allen's or Eykman's process with Schloesing's, and also by the fact that extremely old specimens of spirit of nitrous ether containing no nitrite gave the nitrate reaction. The retardation of the decomposition of nitrous ether in watery solution was shown to be effected by glycerine, by spirit, or by the addition of citrate or acetate of ammonium, in the latter case, of course, some nitrite of ammonium being produced by double decomposition.

Nitrite of amyl contains, when recently prepared, 75 to 80 per cent. of actual nitrite of amyl. The solubility of the drug in water is apparently about 1 in 100,000; the water very rapidly partially decomposes most of the nitrite, thus apparently dissolving it, but the reaction of the fluid is now acid, partially from liberation of nitrous acid, partially from formation of nitric acid.

The quantitative analysis of inorganic nitrites in simple watery solutions was recommended to be carried out by a modification of the permanganate process read by the author before the Royal Society of Edinburgh. If the solution be not a simple watery one a colorimetric process must be used. For organic nitrites Allen's or Eykman's process may be employed, but for inorganic nitrites they are less accurate

than the permanganate method. Qualitatively, the presence of nitrites is best indicated by the starch-iodide method, which detects 1 in 1,000,000, or even 1 in 10,000,000, after a minute or two. Griess's metaphenylenediamine reaction may also be employed: it detects about 1 in 200,000.

After referring to the estimation of nitrites in the blood, the author discussed some points in connection with nitroglycerine. Pure nitroglycerine is a colourless sweet body with a slightly pungent taste, and at ordinary temperatures very slightly volatile, 20 grammes suitably protected losing but 4 milligrammes in ten weeks. This compound either very slowly dissolves in water, a saturated solution containing about 1 in 760. It decomposes in the presence of alkaline substance, forming a certain amount of nitrite of the base employed. A saturated watery solution mixed with a saturated watery solution of bicarbonate of sodium gives nitrite in about one hour, the solution being kept at 100°F .; with phosphate of sodium nitrite is formed in twenty to twenty-two minutes. These are the chief salts of the blood serum, but in the system decomposition commences in two to three minutes, probably the living tissues rapidly dissociating the ether.

Qualitatively, nitroglycerine in watery or alcoholic solution is estimated when in minute quantities by heating the solution with caustic potash free from nitrite and then testing for nitrite. Three or four minutes' boiling of a strongly alkaline solution produces complete decomposition. In the blood and urine it is advisable to extract the nitroglycerine with ether, in which it is soluble in all proportions, and then decompose. Quantitatively the amount of nitroglycerine in a given quantity of fluid is ascertained by following Hay's method of decomposing the ether by caustic potash, &c., and by a colorimetric process, calculating the amount of nitrous acid present; this amount may be termed x . Then, as nitroglycerine in this decomposition breaks up with the reduction of two-thirds of its nitric to nitrous acid, obviously 100 parts of nitroglycerine must yield 33.48 parts of nitrous acid, and the amount of nitroglycerine in the given quantity of the solution will be $x \times 100 \div 33.48$.

The ether-extraction process may well be applied to most fluids and tissues of the body and to the gastro-intestinal contents. In the tabellæ nitroglycerini and in similar preparations it is usually necessary to experiment on oneself to ascertain their relative activity, as the ether fails to extract the nitroglycerine to any extent.

The PRESIDENT having expressed the thanks of the Conference to Dr. Atkinson,

Mr. MARTINDALE said he had not tried to estimate the amount of nitroglycerine in preparations made for pharmaceutical purposes. The quantity required to produce physiological effects was so minute that it was past analysis, he thought. For conveying the substance used for explosive purposes from place to place one property might be taken advantage of, viz, its ready solubility in oil or fats, from which it could easily be obtained by shaking it with ordinary methylated spirit. On throwing the alcoholic solution into water the nitroglycerine separated almost in a pure condition. But this process was not sufficiently accurate to test the minute quantities that were in ordinary pharmaceutical preparations. With regard to the poisonous nature of nitroglycerine among the workers on the subject was one of the earliest, De Vrij, who read a paper at the British Association, in 1851. Regarding its poisonous properties he said, "When I had prepared my first nitroglycerine in 1851 I administered 10 minims of it to a rabbit without the least toxic effect." It did produce powerful physiological action, but it could hardly be made to kill. (Laughter.) Were there records of real death from it? He doubted it.

The Conference then adjourned for luncheon.

On resuming Mr. DOTT read a paper on

THE CHEMISTRY AND PHARMACY OF SOME OF THE MORPHINE DERIVATIVES.

By D. B. DOTT, F.R.S.E., AND RALPH STOCKMAN, M.D.

[Abstract.]

AFTER some remarks on the nomenclature and constitution of alkaloid derivatives, particularly those containing the methyl and ethyl group associated with the alkaloid radicle,

the authors proceeded to describe the methods employed for preparing the following derivatives and their properties.

Methylmorphine (Codeine), $C_{17}H_{19}(CH_3)NO_3$, obtained naturally from opium or by acting upon morphinate of soda with methyl chloride, extracting with chloroform, and purifying. Grimaux, the discoverer of artificial codeine, has proved that it is identical in crystalline form, &c., with the natural alkaloid; the only difference, apparently, was in the specific rotatory power, and this no doubt was due to the presence of impurity. The authors have determined the rotatory power, using an alcoholic solution containing 1 gramme of the base in 11c.c. at $21^\circ C$.

Codeine from morphine, $[\alpha]_D = -137.34^\circ$

Artificial codeine, " = -137.38°

Obviously, therefore, they are identical chemically. Physiological experiments demonstrated that there is exact similarity of action between the two.

Dimethylmorphine, $C_{17}H_{19}(CH_3)_2NO_3$.—This is best obtained by warming together equivalent quantities of morphine, soda, and methyl iodide; then, on cooling, additional equivalents of soda and methyl iodide are introduced, and the solution again digested on the water-bath, the base being extracted with chloroform. The hydrochlorate crystallises with four molecules of water. After discussing the constitutional identity of several similar bodies, the authors proceeded to describe the physiological experiments with the hydrochlorate on frogs and rabbits. It was found that it produced deep depression in frogs, and that the most prominent effect is poisoning of the muscles. In rabbits it did not produce narcosis, and death followed eighteen minutes after the injection of half a gramme, owing to poisoning of the respiratory muscles.

Ethylmorphine, $C_{17}H_{19}(C_2H_5)NO_3$, prepared by allowing molecular proportions of morphine, soda, and ethyliodide to react upon each other, and extracting the base in the usual manner. The hydrochlorate crystallises with 6 molecules of water, and is extremely soluble in water, this property preventing a large yield of crystals. Bochefontaine has stated that ethylmorphine is only a tetanising agent, but the authors clearly prove that it is a narcotic, and that the tetanising symptoms are only produced after narcosis and with very large doses. Its action, in short, is the same as that of codeine.

Diethylmorphine, $C_{17}H_{19}(C_2H_5)_2NO_3$, made in a similar manner to the dimethyl derivative, but was obtained in too small a quantity to permit physiological experiment.

Acetylmorphine, $C_{17}H_{19}(C_2H_3O)NO_3$, or the diacetylmorphine of Wright, is made by boiling morphine hydrate in glacial acetic acid for several hours. When the resulting solution is neutralised with ammonia the base crystallises out. The effect of the introduction of the acetyl group into the morphine radicle is to materially alter its narcotic and tetanising influences, which are induced by smaller doses of acetylmorphine than of morphine. With the exception of this greater activity, the base is otherwise the same as similarly constituted derivatives of the series.

The PRESIDENT said it would be the pleasure of the Conference to give a sincere and hearty expression of thanks to the two gentlemen whose paper had been read. They had in it the results of the exceptional combination of the scientific chemist and the scientific therapist.

Mr. BALKWILL suggested that copies of the papers to be read should be distributed beforehand to members of the Conference. (Laughter.) It was impossible to follow such a paper as this.

Dr. THRESH said the papers read from were simply proofs that the *Pharmaceutical Journal* was kind enough to supply them with. He did not think the Conference could afford to go to the expense of setting the papers up in type. If they could it would be a decided advantage.

Mr. LONG said it would be a good thing if their esteemed friends would send in their papers two or three weeks beforehand, so that they might be published in the journals, where they could read them before they came to the meeting. (Laughter.) They would then be in a much better position to discuss them.

Mr. NAYLOR wanted to know with respect to the experiments upon the formation of the diethylmorphine what

length of time the morphia and iodide of ethyl were heated together.

Mr. DOTT replied that the time the substances were heated together was two hours. Dr. Stockman would have been very much pleased to have attended, but had to go to America.

Mr. LOUIS SIEBOLD then stepped on the platform to give his paper

ON THE PHARMACY OF LOGWOOD.

BY LOUIS SIEBOLD, F.I.C., F.C.S.

[Abstract.]

THE author made a verbal statement on the subject, confining himself to two points advanced at the outset, viz.:—

1. Which is the kind of logwood best suited for pharmaceutical use?

2. What is the nature and condition in which this wood should be used for pharmaceutical purposes?

Most pharmacists would select the superior Campeachy or Honduras woods, and avoid St. Domingo and Jamaica wood; but there was a far more important question involved. Both logs and chips from every source differed greatly in chemical composition. The new or light-coloured woods had undergone very little change; the hæmatoxylin in such wood had not been changed to hematein; whereas the dark wood was allowed to ferment in heaps until the change referred to had occurred to its fullest extent, and it was necessary that it should do so before the wood was fit for the dyer's purposes. During fermentation the astringency of the wood is very much diminished.

Mr. Siebold stated that druggists are dependent for logwood upon those who supply dyers, and that there is in consequence hardly any unfermented wood in pharmacy. He also pointed out that the Pharmacopœia ignores the existence of this commonly-practised process of fermentation, and yet does not give a clear indication of what is intended to be used for making the decoction and extract, for it is stated that (1) the wood is "blackish red externally, and internally reddish brown," which applies to the fermented wood; but it also states that (2) the wood has an "agreeable odour, and a sweetish astringent taste," characters that apply to the unfermented wood; and the author found that there was no wood used in pharmacy which answered the second character.

Regarding the official preparations of logwood, it was stated that the extract is very difficult to make from unfermented wood, as oxidation goes on during the evaporation of the extract, resinous constituents being deposited, and for that reason the resulting hard extract would not form a clear solution with water. Moreover this extract is not made by pharmacists; we are dependent for our supplies upon American and French manufacturers, and their products are so notoriously bad as to be unfit for medicinal use. In fact, a dry extract is a bad thing, and he suggested as an improvement the introduction of a liquor hæmatoxyli prepared from the unfermented wood. This can be prepared by treating the wood with boiling water until it is exhausted, then evaporating until 1 part of the fluid extract equals 1 part of the wood. It is then allowed to settle, and the clear liquor drawn off. It has a specific gravity of 1.06, and is a perfect-keeping article, being soluble either in cold or hot water, and is medicinally very active.

Mr. MABEN said that as to the first question put forward by Professor Siebold there was no doubt, he thought, that they should use the best logwood obtainable. The second question was a little more complicated, and differences of opinion might be raised. He should like to inquire to what they owed the medicinal activity of logwood. Was it to the colouring-matter or something else? Logwood was usually prescribed as an astringent medicine, and he thought the tannin present would have more to do with the action than the colouring-matter itself. Was the tannin affected by the fermentation? If so, that would bring another element into consideration. The fermentation was evidently adopted in order to age the wood, in order that the colouring-matter might be developed to the bright red which they found in the logwood of commerce. Suppose they bought

the unfermented logwood and got it of a much lighter colour than that of the sample sent round, then kept it for a year or two perhaps, and found when they looked at it again that it was quite red, should they use it? The difficulty would be to have a preparation that would always be identical in colour. He did not know that that was such a great difficulty after all, because the preparation which Mr. Siebold had shown them made from the unfermented logwood was also a deep red. He supposed it was almost impossible to get the hæmatoxylin even from unfermented logwood except in the red condition. He was hoping that Mr. Siebold would give them the process for ascertaining the percentage of hæmatoxylin and hematein in the extract of logwood of commerce and also in logwood itself, because that was a difficult subject to investigate. The methods that had been proposed were so extremely unsatisfactory that he was sure they would have been delighted if Mr. Siebold had given them one they could have relied upon. He had sometimes to examine samples of logwood for the percentage of colouring-matter, and had found a difficulty in getting a reliable process and constant results. On the whole, he thought that if the fermentation did not destroy the active medicinal property of the logwood, he was not sure that it would be quite advisable to change. (Cheers.)

Mr. CONROY said he had a question to ask. He did not think Mr. Siebold quite explained whether there was any loss of tannin in the oxidised or fermented wood. It occurred to him that as these logwood chips were used for dyeing purposes the cutters of the wood would find out by experience that by exposing the wood the tannin would perhaps be more developed. He should like to know whether Mr. Siebold thought there was anything in that point.

Mr. HOLMES asked whether the extract had been subjected to therapeutical experiment and found to be as valuable as the extract obtained in the ordinary way. He had tasted it and found it extremely astringent. He had noticed there was a great difference in the colour of specimens obtained in commerce. A gentleman in St. John's Hospital who used the logwood for microscopic purposes pointed out to him some time ago that some logwoods gave a bluish dye and others a purple. Mr. Siebold had thrown some light on the matter; he supposed the bluish colour was due to the absorption of ammonia from the atmosphere.

Mr. MARTINDALE said he did not know that the process of fermentation was followed for the purpose of making the dye preparations. He was sure they wanted the thing in its natural condition. There was a great difference in the extracts that one met with in the market for making preparations. Some would scarcely yield any colour when rubbed with water, whereas others would give a bright purplish colour, and be in great part soluble. He found also a great difference in the colour of the hæmatoxylin one met with in commerce, some being dark reddish, others pale yellow.

Mr. BALKWILL said that he apprehended the medicinal properties for which logwood was used depended upon its being in the ordinary commercial form. It was very possible that the wood in its natural condition would make a better preparation than the wood after fermentation, but it had yet to be proved that the unfermented wood was the correct thing. Although the hard extract was one that was in frequent use, yet he thought he never had any experience of its being dispensed except after being dissolved. To have the hard extract put aside, and a liquid extract used, would be a great improvement.

Mr. R. ROBINSON (London) asked whether Mr. Siebold stated that it was impossible to make a preparation such as he had shown them from the fermented wood, and was the only difference between the extract from the fermented and that from the unfermented wood the sweetness. The logwood they were used to was an astringent, and was used as such.

Mr. MACEWAN had always understood that the darkening of logwood was partly due to the exposure of the logwood to an atmosphere containing a little ammonia. In making decoction of logwood, if distilled water was used a much paler product was obtained than with ordinary tap-water. That seemed to show that alkali had a little effect in darkening the colour. The change that took place on fermentation which Mr. Siebold had referred to was very well known, but still he did not think they should overlook the fact that

darkening was also due to the action of alkalies. He asked Mr. Siebold how far each was responsible for the darkening.

Mr. SIEBOLD, in replying, said he came there to deal with the pharmacy of the subject, and did not consider it useful to go into the chemistry of it. He saw he should have done well to have dealt with that also, and he would make up for the omission now, and give with the greatest pleasure any information he had been asked for. In the first place, he had been asked whether the tannin of logwood was effected by the fermentation, and whether his objection to the fermented wood was this loss of tannin. They would be exceedingly surprised, perhaps, many of them, to hear that very few people knew whether there was tannin in logwood or not. If they would consult the text-books they would find nine out of ten, perhaps, of them did not mention tannin among the constituents of logwood. He had once found it mentioned in a book, but only once, and that was an unimportant volume. He would not let them go away with the idea that the astringency was due to tannin. It was due to hæmatoxylin. There was a little tannin in it, but very little was known of it. The chemistry of logwood and many vegetables had been imperfectly investigated. The ordinary mode of testing vegetable extracts in succession with petroleum ether and ether and water did not enable them to say what there was in the wood, and what would have been the case if water had been used in the first instance. He must qualify the statement that very little was known about the chemistry of logwood except what was in the books. He believed there were a number of chemists who knew a good deal about it, but it happened that these gentlemen were engaged in technical operations which rendered it necessary, or at any rate excusable, that they should keep a part of the knowledge to themselves. (Laughter.) He did not want to withhold anything he had been asked for, but he did not feel called upon to do much more than answer the questions. (Laughter and cheers.) One gentleman asked how the fresh wood was to be kept if it was so liable to change, and said that after a while it would be red in appearance and liable to further changes. If they would reduce the logs to a coarse powder—he should prefer that to chips—they might keep the powder as long as they liked. There would be a change, but it was merely a superficial change; and, if it were kept for years carefully stored, it would still have a sweetish taste. Therefore they were perfectly safe with such a wood. They need not be afraid of an enormous change such as he had pointed out, which was not due to exposure to air, but to the mixing of the wood with something like 50 per cent. of water. It was made soaking wet and exposed to the air; and thereby they got a compound which no longer contained hæmatoxylin, but hematein, and the astringency would be almost entirely lost but for the small quantity of gallic acid which it contained. But there was a strong astringency in the fresh wood masked by sweetness. He made daily estimations of the constituents of logwood, but as tannic acid was a very unimportant constituent of it, and hardly estimable, he could not answer the question as to how much tannic acid there was in the fresh wood, and how much after the fermentation. They could ignore the tannic acid as a constituent. It existed in small quantities combined with the hæmatoxylin. He was further asked whether he was sure about the superiority of this unfermented wood for medicinal purposes, and what was the opinion of medical men on the subject. Well, he had given his own personal experience, not confined to the taste, but also the action of it, and to the relief he had had from it, having suffered for many years from bronchitis. The fermented wood gave him no relief; the other did. But a single case was nothing—they should have a number of cases. As to medical men, he asked them whether, if they as chemists knew so little about logwood, they expected medical men to be so well acquainted with it that they could offer a definite opinion. It would only be after chemistry had taken up the subject and studied it that medical men could go into the matter. (Cheers.) Having explained the influence of fermentation on hæmatoxylin, he remarked that under the influence of the ferment any compound that might exist with tannic acid and other ingredients was broken up. Then he was asked about ammonia. He knew many of the text-books said that there was ammonia in the air. When they wanted to prepare an oxidised product such as hematein from hæmatoxylin they wanted alkalies. If he was to make

hæmatoxylin into hæmatein what should he do? He should extract the logwood and evaporate it somewhat, and then to the strong decoction he should add a large amount of caustic soda, not like a trace of the ammonia in the air, but a large quantity, something like 5 to 10 per cent. Then the absorption of oxygen took place quite irrespective of the ferment, they would have a body absorbing oxygen most rapidly; and what was the product? The hæmatoxylin was converted into hæmatein in the presence of this excess of alkali, and they obtained hæmateiate of soda. If this process was allowed to go too far this resinous matter was produced and the colouring-matter destroyed. That mixture might stand a few days, but by passing a current of air through it a few hours was sufficient to effect the entire change. Whether it was exposed for a few days or not they had a hæmateiate formed, and if they added an acid they got hæmatein. Why was he so determined that the unfermented wood should he used? He asked them in return, Did they ferment their other substances—their herbs, their roots, their harks? Were they not careful to use them in the natural state? Why should they, because dyers and calico-printers required the fermented wood, use it when it had undergone a deterioration? Why should they use an altered and changed product? He said they should not until after the fullest experimental proof was afforded that this oxidised or fermented wood was better or equally suitable. Until that was done they should be prejudiced against the fermented article. If that proof was afforded he should be the first to use such a preparation, if it could be shown to be better. The liquor kept some half-a-dozen years and underwent no change at all; after it had been boiled, and the ferment destroyed, the liquor freed from the sediment was about the most suitable and stable preparation he had come across. If they could have such a stable preparation as that, it was really a subject deserving consideration. On the other hand, a considerable destruction went on in making the solid extract. It was only by the greatest care in evaporating at low temperatures, or in a vacuum, that they could prevent it, and then changes took place on keeping it. A liquor made from aged wood changed in specific gravity from week to week. If they waited for it to settle, they might wait six months, more precipitate forming continually until it lost almost all its solid contents. Altogether he thought he had made out a strong case in favour of the use of unfermented wood. (Cheers.)

Mr. SIEBOLD then submitted another note on

THE APPLICATION OF DYEWOODS IN CHEMICAL ANALYSIS.

[Abstract.]

THE author gave a demonstration showing the use of a tincture of fermented logwood in the detection of metals, especially lead, tin, copper, aluminium, and iron. With care 1 part of aluminium in 50,000,000 parts of water can be detected by this means, and he showed the colours given by 1 part of sulphate of copper in 1,000,000, and 1 part of alum in 1,000,000 of water, and both showed distinctly. (The copper solution was thus about 1 of Cu in 4,000,000, and the alum 1 in 17,000,000.) The detection of alum in flour was also shown by mixing a little flour with water in a porcelain dish, then adding the logwood tincture, when the bluish colour was distinctly developed. Test-paper may be made by dipping in the tincture and drying. A drop of any metallic solution before named placed on this paper instantly changes the colour.

The PRESIDENT thanked Mr. Siebold for his papers.

Dr. THRESH then read brief abstracts of the two remaining papers on the programme.

EXAMINATION OF COMMERCIAL COCOA BUTTER.

By EDGAR J. MILLARD.

[Abstract.]

As the British Pharmacopœia lays stress upon the melting-point of this fat, which is given as "usually between 30° and 35° C.," the author experimented on adulterated samples

made by himself, and found that 10 per cent. of wax, paraffin, or tallow only slightly varied the melting-point outside the official limits. So also with specific gravity as stated by Ramsperger. Keeping alone he found to affect this factor, one sample having increased in two months from 0.9199 to 0.9233. The ether test of the United States Pharmacopœia (really a modification of Fehling's by Björkland) was found to give distinct indication of the presence of 5 per cent. of impurity, such as paraffin, wax, stearin, or tallow, and this test was used, along with the others named, in reporting upon eighteen samples obtained from various sources. In these the specific gravity varied from 0.8748 to 0.9655 in the case of the sixteen presumably pure samples, which also varied in melting-point from 30.5° to 34° C. The two samples which were presumably impure had a specific gravity of 0.9798 and 0.9752, and each melted at 34° C., and gave a turbid solution when treated with ether as directed by the United States Pharmacopœia. All the others gave clear solutions.

QUINOLOGICAL WORK IN THE MADRAS CINCHONA PLANTATION.

By DAVID HOOPER, F.C.S.

[Abstract.]

1. *Analysis of Crown Barks.*—Twelve stems of different size, &c., were taken and analysed so as to show how trees of the same age and growing in the same situation vary in alkaloidal strength. The results were tabulated, and it was seen that the quinine ranges from 3.90 per cent. to 1.75 per cent.; the quinidine from 0.16 per cent. to an entire absence in two cases. The results bear directly on the practice of coppicing, and it seems quite probable that there is no advantage in raising one stem only from a coppiced tree, as two or three stems have equally rich bark. But it would be erroneous to suppose that any great advantage would be gained by growing three stems from one stool, except where the neighbouring trees are inferior in vigour of growth. The results also show that very little dependence can be placed upon the appearance of a tree as indicating its market value.

The same trees were again analysed a year later, and the results summed up show that for six months after the trees were stripped the alkaloids decreased, but increased in the subsequent six months, the one counterbalancing the other.

2. *Manures.*—Cattle, stable, lime and stable, and hone manures were each distributed on a piece of ground divided into five portions, the fifth being left in its natural state. The harks were harvested a year afterwards, and the result of the harvest proved that the amount of bark per tree was highest in the portion containing cattle manure, and the next that from prepared hones, but the quantities of bark from the stable and lime and stable manured portions did not materially exceed the amount of natural bark from the unmanured trees.

3. *Lime in Cinchona.*—A twenty-year old *Cinchona succirubra* was incinerated, and quicklime amounting to 7½ oz. obtained from it. It was distributed as follows:—

	Oz.
Bark of stem and root	4.74
Bark of branches and twigs	1.04
Leaves .. ..	.44
Wood of stem and root	1.28
	7.50

4. *Renewal of Ledgers.*—Under this heading Mr. Hooper shows the effects of renewal upon the alkaloidal value of Ledger barks. The total alkaloids remain practically the same, but the quinine had increased from 1.35 per cent. in the original to 3.87 per cent. in the third renewal, decreasing, however, to 3.03 in the fourth.

5. *The Influence of Prolonged Covering* is to increase the amount of alkaloids, but analysis shows that it is a mistake to keep the covering on longer than three years; after that there is a decrease.

Mr. Hooper concluded his paper by the following

Analyses of Rarer Species of Cinchona.

—	Quinine	Cincho- nidine	Quini- dine	Cincho- nine	Amor- phous Alka- loids	Total
<i>C. anglica</i> , 1... ..	4.16	.64	.27	.34	.68	6.09
" 2... ..	1.57	.47	1.40	.89	1.00	5.33
" 3... ..	1.06	1.21	.28	1.52	.54	4.61
" 4... ..	.84	.55	.38	1.02	.90	3.69
<i>C. verde</i> , 1... ..	2.65	1.18	—	.63	.86	5.32
" 2... ..	1.58	1.17	—	1.62	.40	4.77
<i>C. morada</i>	1.59	2.28	—	.59	.68	5.24
<i>C. nitida</i>	1.42	2.45	—	1.48	.67	6.02
<i>C. micrantha</i> , branch	—	—	—	1.60	.45	2.05
" natural	—	—	—	1.52	.40	2.32
" renewed	—	2.45	—	2.12	1.02	4.59

The PRESIDENT said there was a paper not on the agenda, by a gentleman who was well known to them all, and who had rendered important services to the Conference in days gone by—Mr. Allen, of Sheffield. The following is an abstract of this paper, which was read by the author.

ON CRUDE CARBOLIC ACID AND ITS SUBSTITUTES.

BY ALFRED H. ALLEN, F.I.C., F.C.S., President of the Society of Public Analysts.

CALVERT'S "No. 5 carbolic acid" consists chiefly of cresylic acid, with smaller proportions of carbollic acid and higher homologues and traces of naphthalene and other impurities. For ordinary disinfecting purposes, such an article appears to be fully as serviceable as pure carbollic acid; but according to Dr. Tidy, this statement does not extend to the lime compound of cresylic acid, which is said to be practically valueless as a disinfectant, whatever may be the value of the carbollic compound with lime. This view is borne out by the experience of one of the best-known manufacturers, and hence it may be accepted that in cases where the base of a carbollic powder is slaked lime the resultant "carbolate of lime" is of little value for antiseptic purposes.

After referring to the fact that the term "carbollic acid" is sometimes applied to products from which it has been removed, the author said that another practice is the complete or partial replacement of carbollic or cresylic acid from coal tar by the mixture of phenoloid bodies obtained from the tar or oil produced by condensing the waste gases from coke-ovens or blast-furnaces burning bituminous coal. "Blast-furnace creasote oil" is now produced in enormous quantities in Scotland, and has already found an extensive application for creasoting timber, in producing the "Lucigen" light, and as a liquid fuel. It contains from 20 to 35 per cent. of phenoloid bodies soluble in caustic soda, as against 5 to 10 per cent. in coal-tar creasote oil of London make (Newcastle coal).

A phenoloid extracted by Mr. Watson Smith from blast-furnace tar contained only 1.33 per cent. of real phenol boiling at 182° C., whereas the tar acids from Lancashire coal tars yield about 65 per cent. of crystallisable carbollic acid. The fraction which would contain the *ercsols* (cresylic acid) amounted to 4.5 per cent. of total phenoloids. The other fraction was 10.4 per cent., distilling between 210° and 230°, probably *phlorol* (mixture of the xlenols, C_8H_9OH) and *ercasol*. A large proportion distilled above 230°, but requires further study. The fraction above 360° gave on proper treatment unstable colouring-matters, which are probably allied to the eupitonnic acid obtained from wood tar. The author showed that there is a distinct similarity of composition between this tar and those obtained by condensing the gases from gas-producers and coke-ovens and the crude oil or tar produced by the distillation of bituminous shale, although they differ in essential particulars; but they present a far greater resemblance to each other than they do to the coal-tar acids, and in their analytical characters the phenoloids from blast-furnace tar approximate far more closely to those from wood-tar than they do to the coal-tar acids.

The Eglington Iron Company are now prepared to produce

this article on a large scale, and are introducing it on its merits, and have, at Mr. Allen's suggestion, adopted for their product the name "Neosote"—a word which signifies "new preserver" or "new preservative," and may serve to suggest the similarity of the article to creasote.

Refined "neosote" from blast-furnace tar is, when freshly prepared, almost as colourless as water; but it acquires a sherry colour by keeping. Experiments indicate that it is fully able to compare with crude carbollic acid as an antiseptic, while its caustic properties (when applied in a concentrated condition to the skin) are very much less marked. In short, when properly purified, neosote presents, in every respect in which it has hitherto been compared, the closest resemblance to wood-tar creasote.

The author referred to the quality of similar compounds which are placed on the market, and showed from a table of distillation figures that little reliance can be placed on mere appearance or odour.

The PRESIDENT said Mr. Allen had renewed and deepened their obligations to him by submitting this paper. He tendered him the thanks of the Conference. (Cheers.)

Votes of thanks, &c., followed, as already reported.

COMMITTEE MEETINGS.

A MEETING of the Executive Committee was held at the Grand Hotel, Manchester, on Monday, August 29, at 10 P.M.

Present: Mr. Atkins, President (in the chair), Messrs. Bengier, Brady, Brunker, Conroy, Davies, Dott, Elborne, Gerrard, Maben, Reynolds, Schacht, Symes, Symons, Williams, and Woolley; Dr. Thresh and Mr. W. A. H. Naylor (hon. gen. secs.), and W. H. Ince (assist. sec.).

The minutes of the previous meeting were read and confirmed.

A draft report for presentation at the annual meeting was submitted by the hon. general secretaries, and, after a slight alteration, was agreed to.

The order in which papers should be read at the general meeting was discussed, and the programme arranged.

The treasurer's financial statement for the year 1886-87 was read and approved.

A proposed list of officers for the ensuing year was discussed and adopted for recommendation to the general meeting for election.

The MS. of the Year Book for 1887, so far as it could be completed, was laid on the table.

The place of meeting for 1888 was considered. The committee was of opinion that the Conference should adhere to its usual custom in following the British Association and go to Bath.

A report of the Formulary Committee was presented through its chairman, and read by Mr. Naylor. The report was accepted, and it was agreed to recommend to the general meeting the reappointment of this committee.

A letter was then read from Messrs. Dott and Stockman requesting a grant of 5% for the purchase of materials to carry out an investigation on morphine derivatives. Proposed by Mr. Naylor, seconded by Mr. Conroy, and carried unanimously, that the grant be accorded.

Mr. J. C. Nightingale was elected assistant secretary in the room of Mr. W. H. Ince, who found it impracticable longer to fulfil the duties of this office.

It was announced that Mr. Ryder Horton had resigned the office of honorary secretary for New South Wales, and that steps had been taken for appointing a suitable successor.

Sixty gentlemen were duly nominated and elected to membership.

At a meeting of the Executive Committee held on Thursday, September 1, it was agreed to offer for sale through Messrs. J. & A. Churchill the B. P. C. Unofficial Formulary, at a cost of 6d. per copy in paper covers and 1s. per copy bound in cloth. It was further agreed that every copy should be interleaved.

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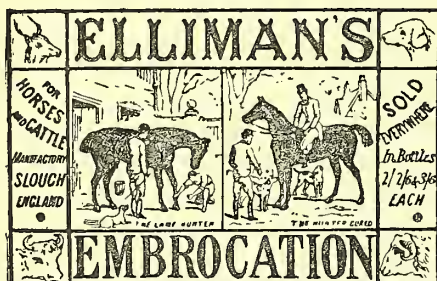
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An analysis of the water having been made in November, 1886, by Professor Wanklyn, M.R.C.S., corresponding member of the Royal Bavarian Academy of Sciences, Professor of Chemistry, a very important discovery has been made, viz., the presence of Free or Elementary Iodine.

Dr. Wanklyn says—"So far as I am aware, this is the first instance in which free Iodine has been found in appreciable quantity in a natural water. For many years the Woodhall Spa has been celebrated as a valuable remedy in skin diseases. The fact that it is a solution of free Iodine is interesting in this connection, and well worthy of the attention of the medical profession."

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EDITORIAL NOTES.

THE FUTURE OF PHARMACY.

PROFESSOR LEECH somewhat startled his pharmaceutical audience at Manchester last week by the suggestion of an era of prescribing and dispensing when the time-honoured galenic preparations, which go to make up so large a portion of the practice of pharmacy as we know it, shall be no more. Can it really ever be the case that the processes of trituration, comminution, digestion, maceration, percolation, decoction, evaporation, exsiccation, clarification, filtration, distillation, calcination, and incineration which we talk and write so learnedly about are to be banished from our home laboratories, and that all our compound messes, infusions, tinctures, and pills are doomed to annihilation? Are all our studies of menstrea, excipients, and degrees of disintegration to be so much labour wasted? Yes, verily, if Dr. Leech reads aright the medical signs of the times. He sees in prophetic vision a day in the future when the prescriber will diagnose his patient's ailments by far more delicate symptoms than those indicated by the rough test of the pulse and the tongue. The heart's action and the power of the electric or vital fluid, or whatever it may be, which courses through the nerves will be measured by ohms, or by some other mathematical calculation, and when anything goes wrong it will only be necessary to stimulate or depress one of these actions by means of an exactly ascertained corresponding dynamic force yielded by this or the other alkaloid in a state of perfect purity. The treatment of disease will be reduced to an algebraic formula.

Dr. Leech does not anticipate any early realisation of his anticipations, and he is not likely to be taken by surprise in this respect. The progress of the art of medicine towards such a scientific standard as is suggested will not seriously affect the pharmacy of this century.

Dr. Leech, however, indicates a condition of things of more immediate interest—a condition which is not only not remote, but is actually upon us. He avows in plain language the favour with which modern scientific physicians regard the medicines of the "enterprising manufacturing pharmacist." This gentleman has been discussed at several recent conferences from an opposite standpoint. We have been told that practical pharmacy will die out if we let the wholesale men get the laboratory work of pharmacy into their hands, and we have been advised to resist the flowing tide, and not to be content until we have raised our own plants, made our own extracts, and produced the ingredients of our pills from the living plant to the gallipot. That would be the ideal pharmacy of the Conference, or it would be if the ubiquitous and iniquitous "Jones," the specialist, and the co-operative store could be got rid of. But it is a picture of the past; and those who adopt pharmacy from mercenary motives will learn to make the best of the new order of things. If the dispensing of the future is to consist simply in counting out

so many ready-made granules, the intelligent chemist will get the most profit he can out of counting the granules. We fail to see, however, that his new duties in this respect will require that increased amount of learning which Dr. Leech politely assures us will be required. But compound medicines are not played out yet. A good many toads will have to be sacrificed before the experience of the last thousand years is abandoned. With every respect for exact medication, we are not yet going to give up our compound colocynth pills, our compound ipecacuanha powders, or our compound senna mixtures entirely for alkaloids. The truths which the pharmacologists have learned from their toads are precisely those which Hahnemann and his followers have taught during the last eighty years. But these are not the whole of medical truth. It is right that pharmacists should be acquainted with all aspects of medical science, but they have not to alarm themselves about sudden revolutions. Whatever may transpire, it is certain that in the future as well as in the present, pharmacists will always be able to find a profitable market for all the scientific knowledge they can acquire; and, if counting out granules should supersede the more complicated operations of compounding, the fields of analysis and of sanitary science are more than ever opening.

THE QUICKSILVER MARKET.

A GREAT many people speculate in quicksilver who would not know a bottle of the metal if they saw one, and whose only notions concerning its use consist of an idea that it is found in thermometer-tubes and at the back of looking-glasses, unless, perhaps, in the days of their repentance they have made its acquaintance as an ingredient of the popular blue pill, in which case they also have an idea regarding one of its uses in medicine. It is not difficult to perceive why quicksilver has become so popular as an article of speculative interest. Its handling, at least in a wholesale way, does not require that skill in judging of quality which most other commodities demand, nor is there any great danger of deterioration, loss in weight, &c., all bottles being practically of the same capacity—viz. 75 lbs. net—and of one standard quality. Moreover, the ups and downs of the quicksilver prices are so erratic as to lend an additional zest to speculative operations.

The idea widely prevails that the price of quicksilver is regulated almost by the whim of a personage known as "the Baron," otherwise the firm of N. M. Rothschild & Sons, the sole consignees, by contract with the Spanish Government, of the produce of the Almaden mines, which are at present the largest works of the kind in the world. It has long been a standing joke in commercial circles that the quotations of quicksilver were a gauge of the "Baron's" luck on the turf, and that if fortune had been adverse to him the consumers of quicksilver were expected to make good his losses by paying an enhanced price for the article.

It may well be questioned, however, whether Messrs. Rothschild are really the quicksilver-autocrats they are represented to be. It would rather appear that there are several factors which compel the firm, as a rule, to keep their prices within certain comparatively narrow limits. The influences to which Messrs. Rothschild are exposed are, besides the state of supply and demand, the production of quicksilver from sources outside their control, their contract with the Spanish Government, and the supply in what is known as "the second hand." The mines at Almaden are the property of the Spanish Government, but they are, so to speak, mortgaged to the banking-house in consideration of a loan made in 1870, and repayable, it is said, in thirty years' time. The firm of Rothschild & Sons have the monopoly of

the sale of the Almaden quicksilver during that period, and it is asserted that the Spanish Government are obliged to supply not less than 32,000 bottles yearly—not a very onerous undertaking, considering that the Almaden mines are practically inexhaustible, the veins of cinnabar ore having in some places a depth of from fifteen to thirty feet, although they have been worked for centuries almost continuously.

With regard to the sale of the metal, it is stated that the understanding between the Spanish Government and Messrs. Rothschild is to the effect that the latter shall pay a minimum of 6*l.* per bottle, whatever the selling-price of the article. If the quotation rules between 6*l.* and 8*l.* per bottle, the excess over 6*l.* is divided equally between the two contracting parties; if the price exceeds 8*l.*, one-third of the excess over that price falls to Rothschilds, and two-thirds to the Spanish Government. Assuming this version of the contract to be correct (and it has never been authoritatively contradicted), the present price of 7*l.* 12*s.* 6*d.* would yield Messrs. Rothschild the very fair profit of 16*s.* 3*d.* per bottle.

During the last few years the changes in the value of quicksilver have been less sudden and considerable than was customary at one time, in 1873 and 1874 for instance, when the price on one occasion rose to 26*l.* per bottle, the maximum known since the Rothschild control, and fell at another to 9*l.* 17*s.* 6*d.* per bottle. During the years 1882, 1883, and 1884, mercury was at its lowest ebb, the quotation being almost uniformly under 6*l.*, while in January, 1884, it declined to the cheapest price ever known, viz., 5*l.* 1*s.* 6*d.* per bottle. Since then the tendency has been an advancing one, and the current quotation of 7*l.* 12*s.* 6*d.* per bottle is the highest known since 1880. The reason of the low values prevailing a few years ago may probably be found in the determination of Messrs. Rothschild to crush the Californian quicksilver industry, which had become a most inconvenient competitor. In that country quicksilver-mining is of comparatively recent date, having originated about 1850, but when it was once found to be a paying pursuit large capitals were invested in it, and the Californian mines yielded immense quantities of the metal, in some years probably as much as 70,000 or 80,000 bottles, an output largely in excess of the Spanish production. The prices prevailing during the palmy days of the Californian industry were extremely remunerative, and the dividends of the larger mines in the course of a few years almost equalled the share capital. American quicksilver was not only consumed in the United States, but found an outlet in Central and South America, in China, and even in Europe, where it competed with the Spanish article. The Americans had the advantage, at first, of better machinery, for while at Almaden an antiquated system of roasting the ore was followed, which caused a large proportion of the metal to be wasted, the loss by evaporation in America was reduced to a minimum. On the other hand, the cost of production in California was excessive, miners' wages alone amounting, it is said, to about 4*l.* per bottle, and when the price of Spanish quicksilver took a persistently downward course, the Americans had to confess themselves beaten. One by one the Californian works were abandoned, and at present, although several mines are still being worked, America has practically ceased to be a serious factor in the production. It is quite possible that Messrs. Rothschilds, having thus crushed their most dangerous rival, now intend to gradually raise the price of quicksilver to something like the old level. Excessive prices, however, might stimulate the mining operations which are now carried on in a more or less tentative fashion in different parts of the globe, notably in Russia and Australia, and call fresh rivals into existence. The Queensland mines have been much talked about lately, but so far their produce has not been met with on the market,

though it was reported the other day that about 170 lbs. of mercury had actually been recovered from the sulphide, and that the working expenses would not exceed 13s. per bottle. The Austrian and Italian mines have lately been shipping increasing quantities of quicksilver to London, perhaps 7,000 or 8,000 bottles per year, but the price generally follows that of the Spanish article, and no serious attempt seems to be made to supplant the latter. This quicksilver is largely used in Germany, Austria, and Russia. The movements of quicksilver at London, which is practically the only market of importance, during the last five years have been as follows:—

	Imports B.	Exports B.	Highest Price £ s. d.	Lowest Price £ s. d.
1886..	58,965	66,080	7 10 0	5 13 0
1885..	55,153	48,823	6 15 0	5 10 0
1884..	59,970	52,492	6 15 0	5 2 0
1883..	54,520	48,997	5 17 6	5 2 0
1882..	45,921	40,424	6 5 0	5 14 0

It will thus be seen that since the beginning of 1882, when the stock of quicksilver in London was unprecedentedly high (it was then estimated at no less than 90,000 bottles), until the end of last year, 274,530 bottles were imported here, while the re-exports totalled 256,816 bottles, leaving a balance of 17,714 bottles. But the consumption of quicksilver in the United Kingdom is computed at 13,000 bottles per year, or 65,000 bottles in five years, so that, calculating on this basis, our stock at the beginning of the year cannot have much exceeded 43,000 bottles. From January 1 to August 31, 1887, 56,831 bottles were imported and 46,390 re-exported, leaving a balance of 10,441 to provide for the British consumption, which during these eight months may be estimated at 8,650 bottles. Our stock, therefore, must have increased since January by another 1,791 bottles. As a rule, the imports of quicksilver decline during the last four months of the year, and, taking this into account, together with the fact that our exports have an advancing tendency, the chances seem to be that the price may continue to advance gradually to the highest possible point which can be attained without giving a fresh impetus to extra-European competition.

It should here be explained that, while the returns relating to the imports and exports of quicksilver in this country are taken from official sources, the stock in London and the consumption in the United Kingdom can only be estimated, the Rothschild interest preventing the publication of the detailed statistics from the warehouses where the article is stored.

Our largest foreign customer for quicksilver is China, where vast quantities are annually consumed in the manufacture of vermilion. "Chinese orders" are frequently given as the cause for a rise in the article, and speculators casting about for plausible reasons to explain a sudden upward turn have not scrupled to intrude upon the private life of the Chinese Imperial family. Many times within the last few years the "forthcoming marriage of the Emperor of China," and the consequent run upon vermilion for decorating purposes, have been trotted out to explain an advance. It is therefore to some extent satisfactory to learn from recent telegrams that the Emperor's marriage has been postponed for two years, on account of His Majesty's youth and the emptiness of the Imperial exchequer. Until the expiration of that term, therefore, the quidnuncs will be called upon to draw upon their imaginative faculties in another direction.

DERMATOLOGICAL THERAPEUTICS.

EXACTITUDE in the internal administration of medicines is now a generally appreciated tenet amongst medical men. Opinions may vary as to what exactitude implies, whether it

is the administration of a definite chemical compound, a standardised preparation, a "proved" specific, or it may be something indefinite about exact dosage; but the majority are striving to eliminate the "heroic" as such from medication. It is no longer a question of how much physic a patient is capable of bearing, but of how little will combat the disease. The principle has had too limited an application, it having been reserved almost exclusively for internal medication. Dr. Unna, the celebrated German dermatologist, in his address to the Pharmacology section of the British Medical Association recently, showed that for the effective treatment of skin diseases it is equally necessary that exactitude should be the chief factor in the selection and preparation of external remedies. The importance of a sound, healthy skin has been known to man from the earliest times, and whether for the preservation of natural adornments or the comfort which attends the unchecked action of its functions, the more intelligent of the human race are well cognisant of the ordinary methods for preserving the skin in health, which methods are peculiarly alike amongst different races, have altered little with centuries of experience, and are probably the best. Not so with the methods of treating the unhealthy skin. There has been little differentiation of the diseases which affect it, and dermatotherapeutics is little else than a mass of empiricism—remedy upon remedy being tried with little other reason than that they are said to be good for so-and-so. The efforts of Dr. Unna and others of his school are directed to alter this state of affairs. In his address he pointed out that the absorptive capacity of the skin, which is very limited, must be taken into consideration in the application of remedies. The selection of a remedy is important, but it may be, and often is, exhibited in a manner which prevents its action. It has been recognised for years that fatty ointment bases prevent the action of some remedies, but in other respects they are beneficial—for example, when it is desired to check the evaporation of the watery secretion of the skin. In this case a thick layer of fat soon causes the horny layer of the skin to swell by absorption of its own secretion, and in this condition it becomes more permeable to medications. For the same reason impermeable coverings greatly increased the action of remedies. In short, the nature of the disease and the condition of the skin determine the manner in which the remedy should be applied, and Dr. Unna gives three methods: (1) a porous covering which allows perspiration to take place; (2) a fatty covering to prevent evaporation of the watery secretion; and (3) an impermeable covering.

As an example of the first series Dr. Unna mentioned the glycerine gelatines, which are distinguished above all the agents used for promoting the absorption of secretions, and especially in comparison with pastes, by their adhesiveness, which constitutes a most useful addition to their other valuable characteristics. The most important of them is the zinc preparation, of which the following is the formula:—

Oxide of zinc	..	..	..	..	..	3iss.
Gelatine	..	..	..	..	..	3i.
Glycerine	..	..	..	..	..	3iij.
Water	..	..	..	..	..	3iv.

Soak the gelatine in water over night, and afterwards dissolve by the heat of a water-bath. Triturate the zinc oxide with the glycerine, and mix intimately with the warm gelatine solution.

This is applied to the skin with a brush while hot. It is an excellent cooling remedy, and is also useful as an auxiliary to other dressings, but the favourite and the exact method of treatment is to apply the drug direct to the skin in some form in which it dries on, and then cover it with a layer of the zinc gelatine. Salve mulls were taken as an example of

the second class. These consist of a basework of undressed muslin, which is impregnated on one or both sides with an ointment compounded of lard, lanolin, vaseline, or other fats. Pieces are cut out of the required size, fastened to the skin simply by gently stroking them over with the finger, and then bound down with a muslin bandage. In some cases, however, ointments are better than the mulls. The third class is represented by plaster mulls, which are a kind of standardised plaster in which a definite quantity of the drug is spread over a constant surface of the water-proof muslin, and no matter to what extent the amount of the drug is increased, the amount of the mass remains the same. Dr. Unna maintains that these plasters cannot be put on the same level as ordinary plasters, which are never uniform in thickness, and have the medicinal ingredient incorporated throughout the whole mass, whereas the plaster mull has the drug fastened to the muslin by an adhesive agent, and an adhesive coating serves to attach it to the skin. The plaster mulls are specially applicable for cases which require strong remedies, and in the case of mercury mull as a substitute for the ointment in syphilis. Some of these methods of treatment are already used in this country, and there is no doubt that the address, and the discussion which followed it, will have an influence in freeing this department of therapeutics from many of its empiric methods.

The following table shows the amount of duty collected by the Customs on the importation of the articles named for the years ending March 31, 1886 and 1887, respectively:—

	1887	1886
Chloroform	£ 2	£ 6
Chloral hydrate	979	1,045
Collodion	16	6
Ether, sulphuric	15	5*
Ethyl, iodide of	—	—
Naphtha, purified	—	—
Soap, transparent, in the manufacture of which spirit has been used	180	224
Varnish containing alcohol	142	91

As the duty on chloroform is 3s. per lb., it appears that the total quantity of that article imported from abroad last year was under 14 lbs. The duty on chloral hydrate is 1s. 3d. per lb. The total import of the chemical for home consumption was therefore 15,664 lbs.

* *

From the report of the Commissioners of Customs for the past year just published, it appears that the colonial and foreign parcels-post has caused a great deal of labour to Custom House officers. It was foreseen from the commencement that this post would afford a ready means for the introduction of contraband and prohibited goods, and the attendance of Customs officers is consequently required at the General Post Office at all periods of the day and night, as well as on Sundays, in order to examine and clear the parcels-posts immediately on arrival. The total number of parcels dealt with by them in London since the commencement of the service up to March last was 190,963, of a value of 274,241l. Of this number, 178,240 were declared and found to contain free goods only, and were, after examination, passed out of the charge of our officers; 658 were declared to contain free goods, but were found to contain dutiable or contraband articles; 9,338 parcels were declared and found to contain goods liable to duty, on which the gross amount of Customs charges levied was 3,063l. 12s. 3d.; 7 declared as dutiable were found to contain free goods; 1,740 parcels were received in transit for foreign countries or British possessions, of which 128 contained goods liable to imperial duties; and 980 were returned to this country as undeliverable for various

reasons. At Liverpool and Newcastle-on-Tyne, where Canadian and Norwegian parcels are received, 4 parcels only out of a total of 4,281 were found to contain dutiable or prohibited articles not properly declared. Besides the above parcels dealt with on importation, there were exported from London 309,481 parcels of the declared value of 407,258l., 12,638 from Liverpool of the value of 10,133l., and 2,538 from Newcastle of the value of 2,071l. A record of these parcels is kept by the officers of Customs for statistical purposes.

* *

The *Potards'* *Journal de la Drog.* gives the text of the manifesto which has been issued by fifty

Parisian *potards*, or chemists' assistants, to their colleagues, calling upon the latter to combine for the purpose of obtaining redress of the grievances from which they are said to suffer, and which were described in our issue of last week. The document runs in the following style:—"Comrades! While all other branches of industry have formed unions, the chemists' assistants alone have until now shown themselves opposed to all endeavours of effecting a combination. A few years ago a trades-union was formed by a few brave spirits, but it was soon disorganised by the admission of master-chemists within its ranks. Let us watch well in future, and declare that henceforth we shall unite with the sole object of resisting the demands of the masters. For the rest, comrades, fear not. Our friends of the Labour party in the Paris Town Council are about to propose the establishment of municipal pharmacies, which will administer a heavy blow to our oppressors, and enable us to improve our position by making us employés of the municipality. No defections, comrades; come and join our trades-union on Wednesday next, if you can, by forwarding your assent to citizen Rienzi, chemist's apprentice, 119 Rue Saint-Charles, XVth arrondissement. Long life to the Union of the Workers! Long life to the Labour Party!"

* *

A society of medical men has recently been formed under the title of the Therapeutical Society, whose objects are of the first importance to pharmacists. Briefly stated the society is formed for the purpose of investigating all methods of treatment of disease, past, present, or future. All medical practitioners are eligible for election, provided they have not already avowedly pledged themselves to any exclusive line of therapeutics. Meetings will be held in London once or twice a month during the winter and spring. It is proposed to have a quarterly journal of proceedings, so that not only the provincial members but the general profession abroad may be kept in touch with the work of the society. All methods of treatment will be discussed, and the word "therapeutical" is to be taken in a broader sense than as of only referring to drug treatment. The annual subscription will be 10s. 6d. for the first two hundred members; then 1l. 1s. will be the charge. This subscription is only due after the first general meeting, and payable to the treasurer, and is not inclusive of the price of the journal, the subscription for which will be decided by the Council later on. The council consists of Dr. Sydney Ringer, F.R.C.P. and F.R.S., president; and Drs. Milner, Fothergill, Prosser James, Stretch Dowse, Haward, Rayner, Campbell, and Illingworth as executive council. Mr. A. G. Bateman, M.D., of 64 Longridge Road, S.W., is honorary secretary. We understand that the action of drugs will not be an entirely subordinate part of the society's proceedings. This being so it is desirable that pharmacists should be associated with the medical men in the work of the society. The treatment of disease is to a large extent dependent upon the manner in which drugs are exhibited, and to determine the best means of exhibiting remedies, and for the investigation of the properties of new remedies, the Therapeutical Society would find great assistance from a pharmaceutical section composed of pharmacists. We throw out the suggestion in the hope that something may be done in this direction while the society is in its infancy.

THE MANCHESTER MEETING.—Mr. W. Belfield, of Ashton-under-Lyne, who attended the Conference, was incorrectly named in our list as of Aberdeen.

* Excess of repayment. [The increase in 1887 is therefore 207.]

FRENCH PHARMACEUTICAL NEWS.

(From our Paris Correspondent.)

DR. DORVEAUX, the librarian of the Paris College of Pharmacy, has been ordered by the German authorities to leave Metz, his native place, where he was spending his vacation with his wife and infant child.

THE NEW DIRECTOR OF THE ALFORT VETERINARY SCHOOL.—Dr. Edmond Nocard, a professor at the Alfort school, and a member of the Academy of Medicine, has been appointed director, in place of Dr. Goubaux, retired at his own request.

MARSEILLES SCHOOL OF MEDICINE AND PHARMACY.—M. Rietsch, a pharmacist of the first class, and a doctor of natural sciences, has been appointed professor of chemistry in place of the late M. Rousset, whose "suppléant" he had been for some time.

SECRET REMEDIES DENIED RECOGNITION.—At the sitting of the Academy of Medicine, on August 30, M. Johannes Chatin reported upon quite a batch of new preparations, presented according to law by their inventors, so as to obtain permission to offer them for sale. M. Chatin concluded adversely against every one of them, and his conclusions were unanimously adopted without discussion.

NEW VETERINARY GRADUATES.—According to official reports the Alfort Veterinary School has conferred, for the session just ending, the diploma of veterinary doctor on fifty-nine candidates. The Lyons school turned out forty graduates, and the Toulouse thirty-two, for the same term. And yet, during the mobilisation now taking place in the south, the military authorities had in some instances to call upon civil veterinary surgeons to examine the horses drafted, because army veterinarians were in insufficient numbers.

MORE MINERAL SPRINGS.—At a recent sitting of the Academy of Medicine Professor Planchon read a report on a number of mineral springs, mostly in the Vals and Vichy districts, the owners of which were asking for an authorisation to sell the waters to the public. He reported adversely on two of them, and favourably on fourteen, and his conclusions were unanimously concurred in by his colleagues of the academy. As the learned Professor's competence cannot be questioned, one must infer that France is very rich in mineral springs. It is a pity Paris cannot be supplied with pure non-mineral water, and more of it.

SUPPRESSION OF A PHARMACISTS' ASSISTANTS' ASSOCIATION IN ALSACE-LORRAINE.—An order issued on August 23, by the authorities of Lower Alsace, has directed the suppression of the Alsace-Lorraine Association of Pharmacists' Assistants, and the committee of the association have just received the notice of dissolution from the police. The reason for the suppression is, according to the *Strasbourg Post*, that in the course of police searches made among the books and papers of the association, and those of the *Sundgovia*, proofs were found of their anti-German tendencies. For instance, the members would hold no intercourse with other university societies, were all Alsations by birth, and would admit no Old German to membership.

DISPENSING UNDER DIFFICULTIES.—Pharmacist Aid-major Lahache, a graduate of the Paris College of Pharmacy, writing from Biskra, the southernmost point of civilised Algeria, relates some of the difficulties encountered by the pharmacist who tries to follow the French Codex near the Sahara desert. "After May," he says, "it is hardly possible to dispense an ointment or a salve in Biskra, both lard and vaseline remaining almost constantly liquid; mercurial ointment separates into two layers, one quite fluid and transparent, and the other semi-liquid, but holding still the metal in suspension. Cocoa butter is useless, so are suppositories; the temperature of the human body being during the day inferior to that of the atmosphere, any composition that would be solid before introduction would not melt in the cavities for which such medicaments are intended, a state of things contrary to all pharmaceutical ethics. Woe to the pharmacist who would leave unstopped any bottle of ammonia, collodion, or tincture! Crystallised sulphate of soda begins to liquefy in June, to become solid again only in

September. The same is the case with carbolic acid. Adhesive, gold-beater's skin, and court plasters cannot be used. Infusions, decoctions, and emulsions spoil in a few hours. Licorice-root has to be rejected and replaced by glycyrrhizin. All indiarubber instruments must be abandoned. Some pill-masses cannot be made at all; for the others the excipients are to be altered, and what is worse, the familiar pill-machine, owing to the dilatation of the brass plates, either have their grooved portion bulging out of shape if the wooden frame is strong enough, or the wood cracked when the metal is the stronger. The only drop of comfort is that ready-made solutions can be kept in stock at a degree of concentration impracticable in our climates. Such are boric acid, sodium borate, salicylic acid, and hypodermic solutions in general." As to the feelings of the pharmacist under such conditions, they may readily be imagined; no doubt he wishes he had never left the green banks of the Seine.

MARRIAGES.

[Notices of Marriages and Deaths are inserted free if sent with proper authentication.]

DOW—LOWE.—On August 25, at Crosswell Kinross, by the Rev. Robert Smith, William Dow, chemist, to Jean Gray Lowe—formerly mistress, South Public School—third daughter of Mr. George Lowe, Kinross.

POTTER—PEMBLETON.—On September 6, at St. Andrew's Church, Nottingham, by the Rev. Arundell B. W. Whetton, John Henry Potter, chemist, Southampton, to Lottie Pembleton, eldest daughter of Mr. S. Pembleton, hosier, Nottingham.

WINTERTON—CHARLES.—On August 27, at St. Marylebone Church, by the Rev. E. R. Hollings, W. R. Winterton, of Kilburn, N.W. (member of the firm of Ralph Godson & Co., drug and gum merchants, 23 Bevis Marks, E.C.), to Mary J. Charles, second daughter of J. G. Charles, Esq., of Birmingham.

DEATHS.

BAILY.—On August 21, Mr. Reuben Baily, chemist and druggist, Ramsgate. Aged 64.

CANDLISH.—Mr. Robert Candlish, of the firm of R. Candlish & Son, Londonderry Bottle-works, Seaham, died of heart-disease at his residence in Bath Terrace, Seaham, on August 12, at the age of 59. Mr. Candlish was well known and universally esteemed in Seaham and the neighbourhood. He took an active interest in local politics and public movements, and held a distinguished position in the brotherhood of Freemasons. Mr. Candlish, who had been a widower for many years, leaves a family of four sons and two daughters, all grown up. His eldest son has been for some time a partner in the bottle-works.

DR. GIRAUD-TEULON, a member of the Academy of Medicine, died last week at St. Germain, near Paris. Deceased was born in 1816, at La Rochelle, was admitted to the Polytechnic School in 1836, and in 1848 became a doctor of medicine with a thesis on "The Mechanism of Respiration," presented to the Paris Faculty. In 1874 he was elected a member of the Academy of Medicine for the section of "Medical Physics and Chemistry." His early training as a Polytechnician influenced his whole career, and his specialty always remained the application of mathematics to medicine. "The Mechanism of the Heart," "Animal Mechanism," "Theory of the Ophthalmoscope," "The Flight of Birds," "Walk of Man," and "Different Gaits of the Horse" are the titles of his most important works. A benevolent, unassuming man, Dr. Giraud-Teulon enjoined his son to trouble no one about his funeral ("*ne dérange personne*"), and therefore the Academy, not having been notified, was not represented at the ceremony.

ELLIOTT.—On August 14, Mr. Luke Elliott, chemist and druggist, Grimesthorpe, near Sheffield. Aged 62.

FERGUSON.—The death is announced of Mr. William Ferguson, F.Z.S., of Colombo. The deceased gentleman, who was born in the year 1820, had been connected with Ceylon

for nearly forty-eight years, having first arrived in the island in December, 1839. He was the author of a long and valuable series of contributions on natural history and cognate subjects in the columns of the *Ceylon Observer* and the *Tropical Agriculturist*. Sir Joseph Hooker, Benthams, Munro, and others have recognised the fulness and accuracy of Mr. Ferguson's information on botanical questions. He was a self-taught man upon these subjects, and, after becoming a practical botanist and entomologist, made a complete study of the natural history of Ceylon, tabulating the products of every region of the island. He has left behind him, in addition to a mass of notes on other subjects, full descriptions and illustrations for a monograph on luminous beetles, including fire-flies and glow-worms, which will now be undertaken by a specialist.

HARDY.—On August 22, at 10 Fulham Road, London, Mr. George Briggs Hardy, chemist, eldest son of the late Mr. John H. Hardy, of Birmingham. Aged 63.

HUTCHINSON.—On August 19, Mr. Edward Hutchinson, chemist and druggist, Moss Side, Manchester. Aged 67.

GRASSI.—Paris pharmacy has lost another of its distinguished representatives, in the person of M. J. C. Grassi, formerly pharmacist-in-chief of the Hôpital du Midi, and at one time the director of the Pharmacie Centrale des Hôpitaux. Deceased graduated as a pharmacist of the first class in 1845, and in 1847 became an *agrégé* of the Paris College, with a thesis on "The Part Played by Water in Chemical Compounds." He also held the degree of doctor of physical sciences. In civil pharmacy, M. Grassi succeeded Dr. Mialhe in the ownership of the important establishment of No. 8 Rue Favart, opposite the Opéra Comique, which is now directed by M. Petit.

MITCHELL.—On August 26, at Walton-on-the-Naze, James Barr Mitchell, M.D., L.F.P.S.G., of Titchfield Terrace, Regent's Park, and formerly of Paris. Aged 69. Dr. Mitchell was for many years associated with Mr. H. Bollmann Condy in the introduction and exploitation of the permanganates under the various forms of "Condy's Fluid," and several trenchant pamphlets, both in French and English, from his pen assisted largely in promoting the fame of these products as disinfectants. He was a man of wide experience and much culture, and had travelled extensively. The deceased was the son of Mr. Alexander Mitchell, one of the founders of the Glasgow Apothecaries' Company, of Virginia Street, which was formed about 1800 by some of the leading medical men of the city, on the model of the metropolitan institution. Until then there had been no drug shop in Glasgow above the level of a herbalist. He was born in 1818, and took his degree of M.D. and was admitted an L.F.P.S.G. in 1838. He made a special study of botany under Sir Wm. Hooker (the father of Sir Joseph), the then botany professor at Glasgow University. He commenced his professional career as private physician to the late Earl Somers (then Lord Eastnor) during several tours in the Levant, which extended over the years 1841 to 1845. During part of this time he also accompanied Mr. J. Harrison Allan, whose beautiful work, "Pictorial Tour in the Mediterranean," gives an account of the classical ground which they traversed. In 1845 he married the daughter of Mr. Archibald Robertson, of Liverpool, a gentleman well known to the shipping world of that day. After a residence of some years in his native town, Dr. Mitchell took a practice in London near Westbourne Grove, then a pleasant suburb of a few villas. In 1851 he removed to Paris, where he stayed till 1855, and during the Crimean war he made another expedition to Turkey, where he remained, several years till his health was shattered by repeated attacks of fever and ague. In 1859 he introduced from France the manufacture of albumen from blood, the process being first conducted at the chemical works of Mr. Bollmann Condy, at Battersea, who had recently brought out Condy's Fluid, and Dr. Mitchell's enthusiastic advocacy of the fluid had no small share in popularising "Condy" with the medical profession, and making it a household word. In 1873 an unfortunate misunderstanding, entailing ten years of litigation, brought about a split between the proprietors of Condy's Fluid, which, however, terminated happily in 1884 by both sides making over their interests to Condy & Mitchell (Limited). Dr. Mitchell passed much of the latter part of his life in Paris, having handed over the direction of business matters to his

eldest son. He was a member of the Anthropological Society and the Society of Biblical Archaeology, subjects in which he took a lively interest. He had gone to Walton in the hope of recovering vigour, as for some time he had been in a weak state. There he was seized with an attack of diarrhoea, and died rather suddenly.

PROSSER.—On August 16, at Head Street, Colchester, Evan Charles, eldest son of the late Mr. Evan Thomas Prosser, pharmaceutical chemist.

SEDDON.—On June 28, Mr. Edmund Seddon, chemist and druggist, North Road, Preston. Aged 50.

WALTON.—On August 9, Mr. Henry Walton, chemist and druggist, Chester Road, Manchester. Aged 32.

WATTS.—On August 14, Mr. John Thomas Watts, chemist and druggist, High Street, Hampton Wick. Aged 57.

BANKRUPTCY REPORT.

JOSEPH SCOTT, Millbay Road, Plymouth, Chemist and Druggist.

THE first meeting of the creditors of this debtor was held at the offices of the Official Receiver, Plymouth, on August 31, when the debtor's statement of affairs showed liabilities amounting to 876*l.* 7*s.*, and assets, after deducting 19*l.* 2*s.* 7*d.* due to preference creditors, of 66*l.* 17*s.* 9*d.*, leaving a deficiency of 809*l.* 9*s.* 3*d.* The cause of failure was alleged to be depression of trade and loss in business. The Official Receiver's observations are:—"The debtor commenced business in 1873 with a borrowed capital of 300*l.*, 220*l.* of which he says is still owing. The debtor owns a freehold house and shop at 55 Fishergate, Preston, subject to a mortgage thereon for 2,000*l.* and 29*l.* 6*s.* 3*d.* interest thereon." In reply to the Official Receiver, debtor said he came to Plymouth on May 4 last, having purchased the business from Mr. Dampney for 180*l.* He left Preston considerably in debt. He paid the 180*l.* out of the proceeds of his business at Preston, which he sold for 600*l.* Did not make any arrangement with his creditors before leaving Preston, nor did he inform them that he was leaving Preston. He left Preston thinking that he would improve his position at Plymouth. Knew nothing about Plymouth, but this business was represented to him as a good one. The purchaser of his business at Preston paid 100*l.* a year rent. Debtor did not consider there was any margin in value over the amount owing to the mortgagee. He had returned a grand piano to his mother-in-law, at her request, about three weeks before filing his petition, as it was her property. Several executions had been put in, and one of the creditors pressing, there was a sale. Debtor said he had never been able to pay his way ever since he had been in business. The returns from the Plymouth business were at first about 5*l.* a week, but latterly they had fallen off very much. There were six children to maintain at home and two at Preston. No offer of composition was made, and the usual steps will be taken to wind up the estate. The following is a list of the creditors:—

	£	s.	d.
Abbot, W., Preston	32	10	0
Bourne, Johnson & Latimer, London	15	19	3
Crossfield, E., Southport	220	0	0
Clarke, J., Preston	16	10	0
Cuff, J. H., Manchester	20	17	8
Hirst & Brooke, Leeds	17	16	10
Langton, Edden, Hicks & Clark, London	12	11	2
Evans, Sons & Co., Liverpool	10	0	9
Lowe & Co., London	10	0	0
Lawson & Co., London	15	12	0
Maw, Son & Thompson, London	31	17	2
Meggesson & Co., London	12	7	8
Mason, H., London	16	0	0
Parkinson, R. C., Ashton	131	0	0
Silverlock, H., London	10	1	9
Schweppe & Co., Liverpool	10	0	0
Spooner & Co., Plymouth	11	14	3
Southall & Co., Birmingham	10	0	0

Fully Secured.

Catherall, J., Executors of, Preston 2,029 6 3

Trade Report.

Note to Retail Buyers:—It should be remembered that the quotations in this section are invariably the lowest net cash prices actually paid for large quantities in bulk. In many cases allowances have to be added before ordinary prices can be ascertained. Frequently goods must be picked and sorted to suit the demands of the retail trade, causing much labour and the accumulation of rejections, not all of which are suitable, even for manufacturing purposes.

It should also be recollected that for many articles the range of quality is very wide.

42 CANNON STREET, E.C., September 8.

THE Board of Trade Returns just published show a very satisfactory trade during the month of August. As compared with the same month of the preceding year, our imports have risen $8\frac{1}{4}$ per cent. (from 27,821,354l. to 29,699,020l.), and our exports of national produce about 6 per cent. (18,744,859l. to 19,788,299l.) The value of the re-exports of foreign and colonial produce, which has hitherto been every month in excess of last year, now shows a decline, having fallen from 4,640,588l. in August 1886 to 4,162,083l. in August 1887. In the imports the largest increase is in food-stuffs and raw materials for industrial purposes; chemicals advanced $8\frac{1}{2}$ per cent., and oils 15 per cent. The bulk of the growth in our exports lies in textile fabrics, metals, and machinery, but drugs and chemicals also show an increase of nearly 15 per cent.

In the drug trade business has this week been as satisfactory as could be expected, and at the auctions to-day, though they were not very extensive, a fairly brisk tone prevailed, and a very good proportion of the goods offered found buyers. As regards chemicals, quicksilver remains very firm, but quinine has been sold at a fresh decline, and iodides are a shade easier, though why is hard to explain, iodine being as firm as ever. Citric and tartaric acid are slightly easier. Among the drugs which are better since our last report are opium, which is much dearer at Smyrna, though the London market is not much affected as yet, gum arabic, senna, musk, cardamoms, gentian root, cocoa butter, olive oil, and Loxa bark, while shellac has fully maintained the recent advance. Ipecacuanha sold cheaper to-day, but recovered somewhat towards the end. American peppermint oil is flat; oils of clove and star anise are quoted lower.

ACID (ACETIC) is quoted at $2\frac{1}{2}d.$ per lb.

ACID (CARBOLIC) has been in good request lately. The following prices may now be quoted:—Crystals (40° C.) 1s. 5d. to 1s. 6d. per lb. in bottles, and 1s. $2\frac{1}{4}d.$ to 1s. $3\frac{1}{2}d.$ per lb. in tins.

ACID (CITRIC)—Very little business doing. The nearest quotation is 1s. $8\frac{3}{4}d.$ per lb.

ACID (OXALIC) quiet at 4d. per lb., while *Sal acetos* is obtainable at $5\frac{1}{2}d.$ per lb.

ACID (TARTARIC) cannot be quoted so high as last week. *Foreign* now stands at 1s. $6\frac{1}{2}d.$ per lb. *English* is scarcely a market article now; the nominal quotation is 1s. $7\frac{1}{2}d.$ per lb.

ALOES.—*Cape* aloes are rather neglected. At to-day's auctions the small supply remained unsold with the exception of an ordinary drossy lot which fetched 19s. without reserve. 28s. was solicited for a fine bright hard lot, but no bids were made. Some *Curaçao* aloes were sold at a fresh reduction, fair palish to dark red and drossy liver at 75s. to 50s. per cwt.; ordinary, 25s.; drossy Capey at 19s. per cwt. *East Indian* aloes realised 117s. 6d. for darkish hard, and 90s. to 92s. 6d. for ditto soft, in small skins.

AMBERGRIS.—Fine qualities are rare, and command high figures. At auction 10 oz. rather dull grey amber were bought in at 92s. per oz. 42 oz. rubbish sold at 10s. per oz.

AMMONIA COMPOUNDS.—There is very little doing in *Carbonate*, for which the price of 4d. per lb., less $17\frac{1}{2}$ per cent., still holds good. *Salammoniac* remains in limited request, firsts at 34s., seconds at 32s. per cwt. *Sulphate* has declined in value to 12l. 3s. 9d. for grey, 24 per cent., Beckton conditions, 11l. 6s. 3d.; Hull, spot, 12l. 3s. 9d.

ANISE.—157 bales fair grey *Russian* seed was catalogued for sale at the drug auctions. It is held at 25s. per cwt., which is rather above the market value. We received this week a consignment of 101 bags *Chilian* seed, a variety which has been somewhat rare lately.

ANNATTO.—A fresh consignment of fine bright *Pará* roll annatto was offered, and 1s. 5d. per lb. apparently refused. Two cases seed, probably Brazilian, sold at $\frac{3}{4}d.$ per lb.; new Ceylon, fairly bright, was bought in at 2d. per lb.

ARSENIC rather firm at 11s. 3d. to 11s. 6d. per cwt. for white powder.

BAEL FRUIT.—Two parcels dark shell and peeled fruit were taken out for want of offers.

BALSAMS.—*Canada* unaltered, at 1s. 5d. to 1s. 9d. per lb., according to quality. *Copaiba* quiet. Some good bright *Pará* was bought in at 1s. 9d. per lb. at the drug sales; less would no doubt be accepted. *Peruvian* very neglected. No response to a suggestion of 4s. 6d. per lb. for good balsam. Sediment sold at 3s. 2d. per lb. for export. *Tolu* held up to about 1s. 4d. per lb.

BORAX.—Prices remain unchanged. The market is quiet, and second-hand owners still undersell the makers. At Liverpool a fair export business has lately been done in refined borax from the second-hand at 26l. 10s. to 27l. 5s. per ton. Concentrated *Californian* is held there at 24l. 10s. per ton.

BROMINE is quoted at 1s. 11d. to 2s. per lb., having undergone no change, *Potassium bromide* is still obtainable at 1s. $5\frac{1}{2}d.$ per lb.

BUCHU.—Twenty bales rather yellow and stinky round leaves and old long were offered to-day, but there was no demand.

CALABAR BEANS.—There has been a good deal more inquiry lately, and prices have advanced to 6d. per lb.

CALUMBA.—The 516 bags which were included in to-day's catalogues did not contain any good lots. A few bags sold at 18s. 6d. per cwt. for bold dark root, mixed with some yellow, which was rather a good price. For another parcel darker and smaller root 15s. 6d. per cwt. is asked.

CAMPHOR.—*Crude* remains steady. Japan has been sold at 65s. per cwt. c.i.f. reweight, per August-September shipment. At auction 129 cases China, rather badly sea damaged, realised 60s., one lot 60s. 6d., per cwt. *Refined* camphor is quoted at 10d. for flowers, $11\frac{1}{4}d.$ per lb. for bells, and from $11\frac{1}{2}d.$ to 1s. 3d. per lb. for squares.

CANNABIS INDICA.—Neglected. Dark-green tops, dusty and stinky, were bought in at 3d. per lb. nominally.

CANTHARIDES.—A cask of new *Russian* flies was bought in at 7s. 6d. per lb. We noticed at one of the show-rooms a sample of *Mylabris bifasciata*—the Cape cantharides—which was fully described in our last week's issue (Conference papers).

CARDAMOMS.—At to-day's sales a moderate quantity (158 cases) was offered, and mostly sold, with very good competition, at an advance of about 2d. to 3d. per lb. in many instances. *Ceylon Malabar* sold as follows: fine, pale, plump, medium to bold, 2s. 5d.; ditto long, 2s. 4d. to 2s. 5d.; smooth plump, bold, rather yellow, 2s. 2d.; good plump yellowish, medium to bold, 1s. 10d. to 2s.; ditto, smaller, 1s. 9d. to 1s. 8d.; medium long, 1s. 7d.; bold dull grey, rather shelly, 1s. 5d.; dark, specky, and mouldy, medium size to fair, plump brown and specky, 1s. 1d. to 1s. 3d.; pale, but very small plump, 1s.; small, partly split and warty, 10d.; very shelly and skinny (with good competition), $8\frac{1}{2}d.$ to 9d.; very small and mouldy, 5d. per lb. A lot of rather lean *Malabar* sold cheaply at 1s. per lb. *Seeds*, mouldy to sound, 1s. 4d. to 1s. 5d. per lb. The Ceylon exports from October 1 to August 11 are given as follows:—1886-87, 297,164 lbs.; 1885-86, 214,220 lbs.; 1884-85, 130,568 lbs.

CARAWAY SEED.—The caraway seed harvest in Germany has proved very good this year. The oil obtained from the caraway seed has proved excellent, being almost colourless. The demand for caraway seed in Germany is very considerable, the supply until now coming principally from Holland. The German bakers consume thousands of cwts. yearly.

CASCARILLA remains cheap, but a parcel of small dusty and rather brown quill, partly sea-damaged, was well competed for, and sold at 20s. 6d. to 22s. 6d. per cwt.

CHAMOMILES.—The position is somewhat less firm this week, but the reports concerning the crop mentioned in our last issues remain unchallenged.

CINCHONA.—The shipments from Ceylon, judging by the latest mail advices, have lately been increasing in importance. From July 28 to August 11, for instance, 629,052 lbs. were shipped, against only 416,535 lbs. in the same period of 1886. If the same rate of improvement should be kept up until the end of the season (and it should be remembered that the shipments in August and September, 1886, were comparatively light), it is not unlikely that on October 1 the total exports will equal those of the preceding season. At Colombo, it is said, there were practically no sales of cinchona during the first half of August, and holders "preferred to stand off until better prices ruled." If they act up to their preferences they may have to wait a long while; but the Colombo holders, as a rule, do not show so much firmness, and it is by no means unlikely that the next few weeks may witness heavy shipments. The latest returns are:—From October 1 to August 11, 1886–87, 12,741,045 lbs.; 1885–86, 13,766,386 lbs.; 1884–85, 9,666,445 lbs.

Several parcels genuine South American *Loua* were offered to-day, and sold with excellent competition at very high rates, several pence above valuations. From 2s. to 2s. 1d. per lb. was paid for good bright mossy quill, 1s. 5d. to 1s. 10d. for fair ditto, and down to 10½d. per lb. for ordinary. Damaged lots sold at 1s. 5d. down to 5d. per lb. *Guayaquil*, good thin grey, realised 1s. 3d. to 1s. 8d.; damaged, 1s. 1d.; and ordinary stout, 7½d. per lb. Three bales damaged *red bark*, small pieces and dust, were bought in at 6s. per lb. A lot of spurious yellow *Calisaya*, mostly broken quill, was bought in at 1s. per lb., and 10 bales old dusty *Maracaibo* sold without reserve at 2½d. per lb.

CIVET still remains very scarce, as much as 9s. 6d. per oz. being asked for good quality. At the auctions 10 horns were bought in at 10s. per oz.

COCA LEAVES.—Nothing new to report. Thirty-one bales ordinary leaves were shown, but found no buyer.

COCOA BUTTER.—A fresh advance of ¼d. to ½d. per lb. took place at the monthly auctions held on Tuesday. Fifteen tons of Cadbury's brand (in 2-cwt. cases) changed hands on that occasion at from 1s. 1½d. to 1s. 1¾d. per lb.

CREAM OF TARTAR.—The scarcity still continues, all arrivals being quickly taken up, having been sold for forward delivery. Fine white remains quoted at 129½. to 130½. per ton.

CUBEBS remain very firm, and at to-day's sales very full prices were paid as compared with those ruling at the last auctions. Three bags small shrivelled genuine berries sold at 21½. 10s., 2 bags very dusty and somewhat stalky ditto at 20½. Two cases bold grey berries were bought in at 18½. per cwt. This variety, though apparently it sells well in Holland, is looked upon with suspicion here.

CUMIN.—Good *Maltese* seed is still held at 48s. per cwt. At the drug sales a bid of 46s. per cwt. was declined for one parcel.

DRAGONS BLOOD.—Three cases very common drossy slabs in reed sold at 55s. to 57s. 6d. per cwt. Fine gum was not offered.

EPSOM SALTS are quoted at 70s. to 80s. per ton, according to the size of the packages.

GALLS.—At to-day's auctions 55s. to 56s. was paid for sound, and 53s. to 54s. 6d. for damaged blue *Turkey*, and 47s. for green ditto.

GAMBOGE.—Of twenty cases two of dull colour and very cakey sold at 9½. per cwt.

GAMBIER.—*Block* is neglected and tends lower; *cubes* are in good supply.

GENTIAN-ROOT has advanced in sympathy with the position of the markets in Southern Europe. At to-day's sales 17s. 6d. per cwt. was paid for a good lot. In Italy the crop has been, it is reported, a very small one, while the stock still held there is insignificant. From 16s. 6d. to 17s. per cwt. is asked at Leghorn.

GUINEA GRAINS quiet at Liverpool; from 16s. to 17s. per cwt. will now buy.

GUM AMMONTACUM remains very cheap, and is quite neglected. Dark-brown tears, somewhat blocky and seedy, are held at 20s. per cwt.

GUM ANIMI.—Before the auctions last week higher prices were paid for *Zanzibar*, but at the sales the demand was a little less firm. Sales were made of medium pale and amber sorts, to ditto with part reddish, 13½. 2s. 6d. to 12½. 15s.; small yellow and amber to small red and dark, 11½. 2s. 6d. to 7½.; bean and pea amber, 87s. 6d.; very low small dark and drossy pickings, 22s.; siftings, 35s. *Bombay*, of old import, sold without reserve at 53s. to 7½. 15s. *Demerara*, bold and medium yellow and red, chiefly clean scraped, at 5½. 15s. to 6½. 5s.; rough and dark, 3½. 17s. 6d.

GUM ARABIC.—The auctions held last week were rather heavy, and though only a moderate portion was sold, prices were generally well maintained. As regards *Barbary* kinds, a small parcel of brown gum was sold at 5½. 5s. for middling quality, and one of white gum at 6½. per cwt. Of *East Indian* gums a parcel of rather dusty Aden sold at 6½. 2s. 6d. per cwt., which marks an advance. Amrad has brought steady rates, fine clean brown at 97s. 6d. to 102s. 6d. per cwt. Barbary character has sold at 97s. 6d. per cwt.; Ghatti, good pale, at 67s. to 73s.; middling to fair, at 45s. to 56s. per cwt.: fine pale Oomra brought the extreme price of 110s. to 120s. per cwt., and the commoner kinds sold fairly well. A small parcel of fine selected *Cape* gum brought very full rates, one small bag touching the extreme price of 11½. per cwt. The *Egyptian Amrad* catalogued was all bought in; one or two small lots of common have changed hands at steady rates. *Ghezira* is still quoted at 90s. per cwt. In *Turkey* sorts and *Senegal* gums quotations are nominal.

GUM ASAFOETIDA.—Sixty-nine cases were included in to-day's sales, and forty of these, just arrived but of last season's crop, sold at comparatively high prices, occasionally about 5s. above valuations; good pinky block, all more or less soft, at 28s. to 41s.; soft grey loose, 18s. 6d. to 27s. per cwt.

GUM ELEMI.—No fine white elemi was offered at the auctions to-day. Holders are extremely firm, and refused an offer of 28s. 6d. for 10 cases middling quality, not very clean, for which they ask 36s. per cwt. Seven cases common dark block were offered "without reserve," but there were no bids. Nor could a purchaser be found for 28 mats of the same quality. Fifteen casks olibanum-scented hard stony pieces from Aden were bought in at 15s. per cwt.

GUM GUAIAECUM.—A few cases rather dull block are held at 1s. per lb.

GUM KINO.—Four cases small dark siftings sold at 45s. to 46s. per cwt.

GUM KOWRIE quiet and slightly cheaper for the better qualities. Selected, at 8½. 10s.; fine hard well-scraped to good scraped, part rather small, 88s. to 72s. 6d.; middling half-scraped kinds to ordinary soft and rough-coated, 62s. 6d. to 57s.; pickings, 37s. to 46s.; brown, 55s. to 48s.; chips, 60s. to 44s.; dust, 41s. to 6s. per cwt.

GUM MYRRH.—Very little was offered at the drug sales but there are still a good many parcels in the market. Fair pale Aden sorts are worth 95s. per cwt. nominally.

GUM OLIBARUM is very quiet, and no sales occurred at the last auctions.

HONEY.—At to-day's auctions 25s. per cwt. was paid for thick orange *Jamaica*, and 22s. for thin brown ditto. Ten cases *New Zealand* honey, packed in tins (altogether about half a ton), sold with good competition at very high rates, good to fine pale candied at 33s. to 48s.; one lot, in small tins, at 51s. per cwt. A steamer brought 304 barrels *Chilian* honey this week. With regard to the *British* crop,

we hear that in Scotland the yield of honey this season is one of the largest that has been seen for a good many years back. The quality is also superior to that of former years. There is a considerable increase in the number of apiarians in the Lothians and elsewhere. In East Lothian a Bee-keepers' Association was formed in the early of this year, and it has done much to encourage the cultivation of bee-keeping in that county. Flower honey is at present selling at 8*d.* and 9*d.* per lb. retail, while heather honey is being sold at 1*s.* to 1*s.* 2*d.* per lb.

INSECT FLOWERS.—The *O. P. & D. Reporter* is responsible for the statement that early in the spring, about the time when the new crop began to come in, two large dealers, one located at Berlin and the other at Vienna, thinking to circumvent the Trieste operators, and so secure supplies on terms advantageous to themselves, went to the primary market intending to make their purchases direct. Either their visit was not well timed, or they were too eager in their negotiations, for their presence in Dalmatia was at once made the occasion for an advance in the price of the flowers, and every overture made by them was the signal for a further advance. Then came the extraordinary demand for the powder in America, which necessitated large demands upon the producers in the primary market, and stimulated the upward movement there. The speculation in Dalmatia is expected to be short-lived, as speculators are in need of money and will ultimately be compelled to put their stock on the market at prices more in consonance with the views of buyers, whose policy seems to be to leave the speculators entirely alone for the present.

IODINE still remains firm at 9*d.* per oz., but *Iodides* are momentarily quoted slightly lower. *Potass. iod.* at 11*s.* 3*d.*, *Sodium iodide* at 13*s.* 6*d.*; *Iodoform*, 16*s.* 3*d.* to 16*s.* 6*d.* per lb.; *Resublimed iodine*, 14*s.* per lb.

IPECACUANHA.—No less than 88 packages were offered to-day, in two parcels. The first sold partly at a decline of 6*d.* to 8*d.* per lb., but for the second and better lot rather more money was paid, and at the close the fall did not exceed 3*d.* per lb. Nearly one-half of the total quantity offered sold at 4*s.* 1*d.* to 4*s.* 3*d.* for good sound annulated, 3*s.* 8*d.* to 3*s.* 9*d.* for wiry, 3*s.* 8*d.* to 4*s.* 4*d.* for wiry to good, more or less damaged, and 3*s.* 6*d.* to 3*s.* 8*d.* for fairly stout but mouldy root.

LEAD (ACETATE).—Good *white foreign* is still obtainable at 26*s.* 6*d.* per cwt., but the price may very likely advance again ere long. *English white* is quoted at 29*s.*, grey 24*s.*, brown 21*s.* to 22*s.* per cwt.

MERCURIALS.—The following are the correct prices now quoted for quicksilver preparations:—Red and white precipitate, 3*s.* 2*d.*; corrosive sublimate, 2*s.* 4*d.*; calomel, 3*s.*; blue pill, 1*s.* 10*d.* to 1*s.* 11*d.*; mercurial ointment, 1*s.* 9*d.* per lb.

MORPHIA.—To-day the makers' quotations were still unchanged, at 7*s.* 6*d.* per oz.

MUSK is again dearer. *Tonquin musk*, with thin blue skin, was not offered, but eleven caddies old-fashioned pods, first pile, well shaped, dry, small to medium, with top and under skin, sold at from 88*s.* to 90*s.* per oz., chiefly the former price; second pile, genuine but thick skinned pods, at 69*s.*—cheap in comparison; and broken, unsightly, third pile, at 38*s.* to 39*s.* 6*d.* per oz. Ordinary *grain musk* sold at 30*s.* to 38*s.* per oz., without reserve. Two tins *Nepaul* pod musk, small round white-haired pods, were taken out without a bid.

MUSK SEED neglected. Two cases weak-flavoured West Indian seed are held at 5*d.* per lb.

NUX VOMICA is getting rather scarce. At the sales to-day 13*s.* to 14*s.* was paid for fine pale new Bombay, and 5*s.* for dark damaged ditto.

OILS (ESSENTIAL).—Oil of *Almonds* still remains obtainable at 25*s.* per lb. for English. *Bergamot* firm, but unchanged since our last quotation. *Anise (English)* is held at 8*s.* 6*d.* per lb. *Star anise.*—Small sales have been made at 7*s.* 3*d.* per lb., a reduction of 1*d.* English *Caraway* is cheaper, at 7*s.* per lb. *Cubeb* oil has advanced to 44*s.* per lb. *Cassia*, 2*s.* 7*d.* to 2*s.* 8*d.* *Cinnamon* unchanged, at 1*s.* 6*d.* to 3*s.* 6*d.* per oz., according to quality. The shipments from Ceylon have been practically *nil* during June, July, and the first half of

August. The figures now stand, October 1 to August 11:—1886-7, 54,500 oz.; 1885-6, 89,248 oz.; 1886-7, 95,994 oz. *Cinnamon leaf*, 1½*d.* per oz. Oil of *Cloves* (English drawn) can now be had at 6*s.* 6*d.* per lb. *Citronella* still quoted at 1½*d.* per oz. for native brands. The exports from Ceylon have been on a somewhat less extensive scale recently. From October 1 to August 11, 1886-7, 7,749,626 oz. were exported, against 6,004,294 oz., and 4,918,394 oz. in the corresponding periods of 1885-6 and 1884-5. English *Lavender* is now quoted at 32*s.* 6*d.* per lb.; the price for the French oil is not fixed yet. *Lemon* unaltered. *Patchouly.*—Seven cases "bulked" from Penang bought in at 3*s.* per oz., 2*s.* 9*d.* being suggested as the price. *Peppermint.*—H.G.H. American has been sold at 13*s.* 6*d.* per lb. on the spot. Two cases *Menthol crystals* fetched 3*s.* 3*d.* to 3*s.* 4*d.* per lb. in sale. Of *Spearmint* (H.G.H. brand) 6 cases sold without reserve at the low price of 17*s.* to 17*s.* 6*d.* per lb.; another lot is held at 21*s.* per lb. Nine bottles old *Ylang-ylang* sold at 6*s.* per oz. In *Otto of Rose* there is no change.

OIL (OLIVE).—Our stock of *Mogadore* oil is running low, which fact has caused more attention to be devoted to the article. Sales have been made up to 32*l.*, which is now the lowest price. *Sicilian* oil is held at 34*l.* to 35*l.*; *Spanish*, nominally, at 37*l.* From Naples we hear that in that region the persistent drought and heats continue, and sirocco winds have now set in. The reports from Gioja have continued favourable, although good rains and cooler temperature are much wanted; but from all the other growing districts there are complaints of more or less serious injury from the prolonged drought, and in some places the crop appears to be already reduced to an insignificant fraction. There are also apprehensions of the sirocco winds extending the injury from the olive worm at Gioja, Gallipoli, and other infected districts. The Naples market closes firm at an advance.

OPIMUM.—The London market is very firm, but quotations here have not, so far, responded to the advance which set in at Smyrna last Friday, and has continued since then, a large business being reported at rising values, *Karahissar* up to 19*s.* 2*d.* per lb. Smyrna letters, written before the advance, describe the market as follows:—

More animation has been shown lately, a fair amount of business having been transacted for export to England and America, mainly for manufacturing purposes, but at a considerable reduction. The fall in prices on the market here has caused quite a panic among the smaller holders; but the balance of opinion seems to be that the decline is only a passing wave, and that a turn will set in ere long, when it will be impossible to execute orders without paying an advance on each transaction. It is also thought that the difference in price which will then be established between old and new opium will be greater than in any previous season. It is again pointed out by experienced Smyrna dealers that the total crop will certainly not exceed, if it does reach, 1,800 cases, including 600 from Salonica, which will be required for shipment to South America, leaving only about 1,200 cases Turkish opium proper, to meet the requirements. Consequently there can be very little doubt that at the commencement of the next season all stocks of opium will be exhausted, and that, moreover, owing to the drought and tropical heat which have prevailed this year, the soil will be so parched that a double quantity of water will be required to render it productive. As a rule, the periodical rains have already set in at the end of August in the growing districts, but this year dry weather still prevails there. In Smyrna, new opium with "visite" has been paid at the rate of 16*s.* 6*d.* per lb., and there are more buyers at that price, but no sellers. For 1886 *Karahissar* "tel quel," 13*s.* per lb. has been accepted. The arrivals at Smyrna on August 27 were 276 baskets, against 1,956 baskets at the corresponding date of 1886.

ORANGE-PEEL.—Short dark orange ringlets, from *Malta*, bought in at 8½*d.* to 9*d.* per lb., 7½*d.* being refused.

ORRIS ROOT.—The new Italian crop will now soon be placed on the market. It is said to be deficient in quantity, and this has created a better feeling in Italy, values being steadily improving and stocks getting small. The latest Leghorn prices are: *Florentine*, selected, 28*s.* to 30*s.*; second quality, 24*s.* to 26*s.* 6*d.*; *Verona*, from 12*s.* to 17*s.* per cwt., according to quality.

PATCHOULY LEAVES.—At auction one bale dark stalky and dusty sold, without reserve, at 3½d. per lb.; another lot, very stalky and dusty, was bought in at 10d. per lb.

POTASH COMPOUNDS.—In *Bicarbonate* there is no change, business still proceeding quietly at 35s. per cwt. *Chlorate* remains firm at 6d. to 6½d. per lb., but supplies are scanty, and business is therefore restricted. *Prussiate* in fair request at 7½d. per lb. for yellow.

QUICKSILVER.—The importers still quote 7l. 12s. 6d. per bottle.

QUILLAYA.—There is now only a limited demand for the article; 14l. 10s. to 15l. per ton is the nominal quotation.

QUININE.—Prices have again declined since last week. It is reported, though we have not been able to verify the statement, that 1s. 6½d. has been accepted for *German* in bulk. At 1s. 7d. per oz. business was done several days ago, and 1s. 6½d. would be taken for October-November, if not on the spot. There appears to be a fair inquiry, however. Makers' prices are unchanged.

RHUBARB.—At to-day's auctions 123 cases were offered and a good part sold at low rates, especially for wormy root, of which a large proportion consisted. The following prices were paid:—*Shensi* (round) good pale well-trimmed root, medium to bold pinky fracture, 2s. 3d. to 2s. 5d.; ditto smaller and of less nice fracture, 1s. 9d.; small pale coated, wormy, half-dark fracture, 10d.; very wormy medium to bold orange coated, 8½d.; small ditto without colour, 5½d.; (flat) good pale medium size, well trimmed, half pinky fracture, 1s. 4d.; small orange-coated, spongy, rather dark in fracture, 9d. to 10d.; medium to bold very wormy ditto, 8d. to 8½d.; low black wormy, discoloured, 5½d. *Canton* (round) pale medium to bold, fair fracture to wormy, 7d.; small pale spongy and wormy, 5d. to 6d.; (flat) good well trimmed, even pink fracture, 1s. 2d. *High dried*, mixed sizes, fair pinky fracture, but very wormy, 7d. to 7½d.

SARSAPARILLA.—Fifty-one bales were offered, of which the bulk was sold at somewhat higher prices for grey *Jamaica*, which fetched 1s. 9d. to 2s. per lb.; red native, 1s. 4d.; common ditto, 10d.; ordinary *Honduras*, 1s. 1d. per lb.

SENNA.—Notwithstanding another heavy arrival of 497 bales per *Paramatta* this week, the 598 bales *Tinnevely* offered to-day were nearly all sold with excellent competition at an advance of ½d. to ¾d. per lb. Good green leaf, of which there were only a few lots sold at 7d. to 8d. per lb.; fair greenish, partly damaged, 6½d.; medium to thin specky leaf, 5½d. to 4½d.; ordinary blackish to very common, 3d. down to ½d. per lb. *Alexandrian* siftings are held at 8d.

SHELLAC.—Since last week the advance has made some slight progress, and prices are a shade higher for *garnet* and *second orange*, although at the close the feeling in the market is rather quiet. On Tuesday 1,946 chests were offered for public sale, the bulk (1,380 chests) consisting of second orange, the rest of garnet and button lac. About three-fourths of the total supply sold at very full prices. *First orange* ASSL, 65s. *Second Orange* DAC triangle over EG diamond, unworked Calcutta weights, 57s. to 58s.; ditto over K diamond, unworked, 46s. 6d. to 53s.; CHP heart, unworked, 52s. to 53s.; fair, 50s.; SS diamond, 52s.; MM double triangle, unworked, 52s.; GS circle unworked and ES diamond unworked, 51s. to 52s.; DAC triangle over HK diamond, unworked, 50s. to 52s.; B diamond unworked, 50s.; TN diamond, 47s. 6d. to 51s.; WBSC house, 49s. 6d. to 51s.; GS circle, livery, 49s. 6d.; RB diamond, 49s. to 49s. 6d.; BB house, 47s. 6d. to 48s. *Garnet* AC, 43s. 6d. to 44s. 6d. *Button* first, 56s.; second, 50s., third, 40s. to 42s. 6d.; fourth, 38s. The reports regarding the short crop of shellac have not been verified so far.

In the beginning of this year it was rumoured that the well-known DC mark of fine orange shellac was being fraudulently imitated, and that parcels bearing this mark had been tendered to London buyers which were found not to be the manufacture of the only makers of the genuine brand. Messrs. Jardine, Skinner & Co., of Mirzapore, the owners of the DC and BSLS brands of fine shellac, are in the habit of attaching to the inside of the cases which they send on the market a certificate to the effect that the goods have been manufactured by them at Mirzapore. It was found that 150 cases shellac which had been purchased by a London firm as DC or BSLS lac, and were tendered as such upon

arrival, though they bore the shippers' mark and the DC brand on the outer gunny, did not contain the usual certificate, and the arbitrators to whom the dispute was referred declared the shellac in question to be not manufactured by the makers of the genuine DC and BSLS orange lac. Buyers of these marks will therefore do well to exercise caution in their purchases.

At Calcutta, on August 13, the market was very quiet, and in the better marks nothing could be done, as sellers held firmly to their old prices, but the small sellers of inferior native have been obliged to accept whatever they could get. A general closing of factories was freely talked of, as the price of sticklac would not allow any profit to manufacturers.

SODA COMPOUNDS.—*Ash*, very quiet at 1½d. per degree; *Bicarbonate*, in fairly brisk demand at 6l. 15s. per ton. *Caustic soda* is in good request at firm prices—cream 7l. 5s. to 7l. 10s., and white, 60 per cent., 7l. 15s. per ton. *Crystals* are in good demand at 55s. 6d. per ton London; Tyne prices, 45s. 6d. to 46s. *Nitrate*, firm at 9l.

SOY.—*China* has advanced to 1s. 8d. per gallon on the spot lately; while sales have been made "to arrive" at 1s. 5½d. per gallon.

SPERMACETI.—American refined is quoted at 1s. 9d. to 1s. 9½d. per lb.

SPICES.—*Cassia lignea* again cheaper at 21s. to 22s. *Chillies*, 2s. 6d. lower. *Cloves* dull and tending downwards. *Ginger* is 4s. to 5s. dearer for Jamaica, good selling up to 83s., but ordinary Cochin is easier. *Mace* steady. *Nutmegs* quiet. *Black Pepper* is unaltered, but white is quoted higher.

SULPHUR.—A moderate business is passing at the rates of 7s. 6d. to 8s. 6d. per cwt. for *Roll*, and 8s. 6d. to 9s. 6d. per cwt. for *Flowers*, according to quality.

VANILLA.—At to-day's auctions 83 cases were partly sold at irregular but generally firm prices.

WAX (BEES').—A good supply of *Jamaica* wax changed hands quickly at higher rates. Fine pale orange and grey, 6l. to 6l. 2s. 6d.; dark orange and yellow, 5l. 10s. to 5l. 15s.; dark mixed at 5l. 5s., and brown at 5l. Some *Australian* wax sold at 5l. 12s. 6d. to 5l. 15s. for good palish, and bleached *Calcutta*, rather inferior, at 5l. 5s. "without reserve."

WAX (CARNAUBA).—At Liverpool prices still range from 35s. to 59s. 6d. per cwt., according to quality.

ZINC (SULPHATE) is now quoted at 8s. 6d. per cwt.

THE GERMAN MARKET.

HAMBURG, September 6.

VERY little business of any importance has been transacted during the last few weeks, and quietness still continues to reign in all departments of our drug and chemical market. The prices in this column are given in marks (11¼d.) per 100 kilos., or per kilo. (1 kilo. = 2 lb. 3½ oz.; 50¼ kilos. = 1 cwt.). The prices in parentheses show the parity in London.

ALOES.—A good demand has been experienced for the *Cape* variety, but the *Curaçao* is rather neglected.

AGAR AGAR in small supply only, and there is a better feeling in the market. Prime quality is held at 2m. (9d.).

BALSAMS.—*Copaiba* is steady, but little is doing at present. Owners are very firm, and it is said that 3.30m. has been refused. *Peruvian* has been slightly easier, 9¼m. to 10m. (4s. 3d. to 4s. 6d.) for genuine quality now quoted. *Tolu* has slightly recovered and is now held at 3.10m. (1s. 3d.); small arrivals came to hand.

BARKS.—*Cinchona.*—Porto Cabello.—In spite of the high prices there has been a regular demand for this bark, and the supply is a very small one. A parcel of 260 packages Maracaibo was sold at 45m. to 48m. (2d. to 2½d.), a very low price. A consignment of 33 packages Calisaya, partly flat, hard, yellow bark came to hand, but is offered at very high prices—4m. to 4.50m. In *Condurango* small sales have been made at 9m. to 9½m. (4d. to 4½d.). It is said that the stock in the article is quite exhausted, and nothing is known as regards future arrivals.

BORAX (REFINED).—The prices of the convention are unchanged—61m. to 62m.—but second-hand holders offer 1m. to 2m. below that figure.

CAMPHOR (REFINED).—No improvement is noticeable in the market, and quotations still remain at 175m. to 177m.

OILS.—*Star Anise* quiet at unchanged rates. *Cassia* neglected at 5.50m. *Peppermint*.—H. G. Hotchkiss brand is offering at 12½m. per English lb. There is a good inquiry for Japanese oil, and this article is quoted higher. A lot of about 1,000 kil. changed hands.

ROOTS.—*Jalap* is very firm at 110m. to 115m., and it is thought that a further rise will shortly occur.

SEEDS.—*Cumin* in good demand, and holders are very firm at 90m. to 95m. (4d. to 4½d.) for Maltese. *Sabadilla* inactive and quite neglected. *Musk* seed not in much demand, consumers being well provided, and prices are therefore rather lower. East Indian is held at 90m. (4d.). An arrival of 15 bags fair West Indian seed of good flavour has taken place.

WAX (JAPAN) is dearer; 100m. to 102m. is asked for prime white squares.

TRADE-MARKS APPLIED FOR.

THE Trade Marks Journal publishes the following notice:—"Any person who has good grounds for objection to the registration of any of the following marks may, within two months of the date of this journal, give notice in duplicate at the Patent Office, in the form 'J,' in the second schedule to the Trade Marks Rules, 1883, of opposition to such registration." The address of the Patent Office is Southampton Buildings, London, W.C.

From the "Trade Marks Journal," August 31, 1887.

"CARBOLECON," and signature crossed; for curative preparation for skin diseases, &c. By C. Georger, chemist, 10 Milner Street, Islington, N. 54,909.

"PROCTOR'S 'DEFIANCE' INK," for inks. By J. M. Proctor, ink manufacturer, 291 St. Ann's Well Road, Nottingham. 57,142.

"VICTORIA CROSS CARBOLIC," for disinfecting soap. By J. Blair & Son, 40 Leith Street, Edinburgh. 62,231.

"P. JAMES' IVORINE," on label; for a liquid starch glaze. By J. P. Mullins (trading as P. James & Co.), 2 Southfield Terrace, Merton Road, Wandsworth. 62,617.

"SWEET," on figure of a pill; for coated pills and capsules. By Barron, Harveys & Co., 6 Giltspur Street, E.C. 62,944.

"SHAM CHAMP," and other wording, on label; for an aerated beverage. By J. G. Redgate, Traffic Street, Nottingham. 63,147.

"TURNER'S HERB BITTERS," and other wording, on label; for herb bitters. By A. M. Turner, Newton Brewery, Ayr. 63,214.

"GAMGEIS FLUID"; for an antiseptic. And "Gamgeis Powder"; for a fluid antiseptic. By The New Chloralum Company, Wilmer Gardens, Kingsland Road, E. 63,797-8.

"NEWTON-MASON'S HOREHOUND AND LINSEED LINCTUS," and other wording, on label; for a cough mixture. By A. Newton-Mason, chemist, 29 Great Hampton Street, Nottingham. 64,337.

"DR. RICHTER'S BOGATA PILLS," "Dr. Richter's Loxa Pills," and "Dr. Richter's Hioga Pills"; for pills for human use. By Dr. F. A. Richter (trading as F. Ad. Richter & Co.), pharmaceutical manufacturer, 1 Railway Place, Fenchurch Street, E.C. 64,786-8.

BORACIC ACID is recommended as a local application in the treatment of leucorrhœa. The crystals of the acid are applied to the intra-vaginal portion of the cervix and the upper part of the vagina.

LONDON DRUG STATISTICS.

THE following figures refer to the stocks of the principal drugs in the Port of London on August 31, 1887, and to the imports and deliveries from January 1 to August 31, as compared with the same period of the preceding year:—

Article	Stocks		Imported		Delivered	
	1887	1886	1887	1886	1887	1886
Aloes .....cs	5,581	4,311	3,610	2,759	3,245	2,927
"kegs	8	12	57	—	61	12
"gourds	146	315	149	379	249	221
Anise, Star ...chts	321	333	217	88	135	193
Arrowroot ...cks	16,132	15,276	13,935	13,448	9,676	9,535
"bxs & tins	8,934	3,294	8,214	2,866	3,785	2,636
Balsams .....cks, &c.	751	563	603	579	543	584
Bark, Medicinal						
cks & cs	10,964	9,212	21,723	21,365	18,622	16,642
srns, &c.	50,319	60,079	28,925	28,000	33,072	26,603
Borax .....pkgs	1,336	1,206	2,459	1,596	807	1,078
Calumba "	1,252	1,703	1,331	1,854	1,606	1,078
Camphor "	3,905	4,515	3,625	3,466	5,895	6,075
Cardamoms ...chts	1,121	743	2,539	2,120	2,451	2,203
Cochineal ....srns	5,541	7,209	2,122	3,530	3,445	4,107
Coccol. Ind. bgs, &c.	476	249	294	330	253	413
Cream of Tartar cks	11	21	27	73	27	100
Cubeb's .....bgs	77	183	277	293	292	123
Dragon's Blood cks	110	133	98	101	120	98
Galls, China....cs	2,912	5,953	3,476	6,294	3,122	3,483
Tryk & Prsn sks	5,009	6,124	4,785	9,744	3,708	6,275
Gum—						
Ammoniac pkgs	279	252	128	277	134	175
Animi & Copal						
pkgs	3,188	7,414	4,263	6,762	6,017	6,027
Arabic..... "	10,575	16,260	10,913	25,338	15,547	18,359
Asafetida.... "	526	1,035	72	831	323	603
Benjamin "	1,832	1,974	1,645	2,179	1,450	1,791
Damar "	4,056	5,902	3,588	7,014	4,254	4,941
Galbanum.... "	—	9	1	—	1	6
Gamboge "	164	198	212	368	251	309
Guaiaacum.... "	95	74	48	95	29	59
Kino "	67	119	12	9	37	45
Kowrie .....tms	733	1,191	1,255	1,085	1,377	1,932
Mastic .....pkgs	111	145	10	73	25	47
Myrrh..... "	519	328	634	323	343	314
Olibanum "	5,005	5,161	5,877	4,281	4,350	3,967
Sandarac "	1,156	1,374	986	1,266	1,076	1,273
Tragacanth .. "	918	1,005	1,814	1,734	1,495	1,578
India-rubber, E.I.						
tons	327	152	547	423	315	447
Madagascar.... "	11	13	49	54	46	71
S. American.... "	135	43	238	120	137	173
Mozambique.... "	377	248	569	503	465	480
African, &c.... "	3	—	3	12	—	13
Total	853	456	1,405	1,118	963	1,184
Indigo, East Indian						
chts	13,307	15,994	16,852	19,675	14,147	12,816
" Spanish srns	2,282	2,777	3,745	4,095	3,392	2,917
Ipecacuanha						
cks & bgs	229	210	371	423	248	335
Jalap .....bls	194	183	89	166	49	180
Lac Dye .....chts	7,592	7,934	28	494	247	555
Myrabolans...tms	8,170	7,359	7,245	9,013	7,029	7,915
Nux Vomica pkgs	454	1,019	489	1,372	694	1,337
Oils—						
Anise .....cs	164	286	110	277	112	275
Cassia .....cs	180	147	210	277	127	294
Castor .....cks	499	471	395	647	492	712
"cs	3,911	5,805	3,751	7,362	6,278	8,428
Cocoa-nut....tms	1,833	1,417	3,292	2,912	2,763	3,400
Olive .....cks, &c.	942	1,884	3,401	8,537	3,297	7,972
Palm .....tms	181	8	81	101	80	336
Opium .....chts, &c.	2,115	1,873	1,255	658	1,288	933
Rhubarb.....chts	1,407	1,754	836	899	1,281	1,196
Safflower....pkgs	397	455	293	334	310	227
Saltpetre ....tms	836	1,089	3,843	4,235	3,998	5,910
Soda Nitrate..tms	1,594	6,239	16,192	12,317	13,731	11,405
Sarsaparilla...bls	480	530	1,001	1,129	884	1,024
Senna ....bls, &c.	1,925	486	3,341	703	2,276	915
Shellac, Orange						
chts, &c.	44,332	38,920	27,070	21,790	19,594	19,113
Garnet.... "	17,502	11,887	10,849	6,190	4,936	6,368
Button.... "	13,031	12,159	7,505	9,842	5,972	7,313
Total	74,855	62,966	45,424	37,822	30,532	32,794
Sticklac, cks, &c.	4,203	4,775	637	588	543	1,224
Gambier .....tms	459	836	7,098	8,809	8,284	8,947
Cutch "	811	2,422	1,544	2,494	2,071	2,192
Turmeric "	2,147	1,779	1,576	2,270	1,291	1,349
Vermilion, cks, &c.	55	61	69	129	68	68
Wax, bees'...bls & srns	1,000	1,409	734	1,139	783	850
" cks & cs	1,630	1,436	1,972	1,930	1,669	1,957
cakes	18	105	26	117	—	16
Wax, Japan...pkgs	656	1,812	454	1,574	1,145	1,523



Koumiss.

SIR,—I observe in a recent issue of THE CHEMIST AND DRUGGIST that you quote my formula for the preparation of artificial koumiss. Since the formula was published I have succeeded in improving it, so that the product is seldom, if ever, anything else than is desired, and is as near as possible the same in composition as the koumiss made from the formula which you quote, and which was almost identical with Tartar koumiss.

According to the improved formula a gallon of skimmed milk is taken, and to this 5 oz. of simple syrup and 25 oz. of water are added. Break down between the fingers a drachm of compressed yeast (I use that made by Squire's patent), mix with a small quantity of the fluid, and add to the remainder. Place the fluid in a covered vessel and let it stand in a warm place until fermentation has set in thoroughly, which can be judged by the yeast coming to the top and forming a distinct scum. The temperature should be about 120° Fahr., but I do not find the fermentation to be checked by a higher temperature even; the object is to develop brisk fermentation quickly. Now take a gallon of buttermilk, add to it 30 oz. of water, and mix with the fermenting liquor. Strain through a hair sieve and bottle. The milk used should be fresh or old, according to the quality of koumiss desired. If a pleasant beverage is wanted, then the milk should be fresh, but if a remedy for persistent vomiting, in other words an acid koumiss, is wanted, the milk should be of the sour character. After the koumiss is bottled the bottles should be laid aside for three days, and shaken three times a day. It keeps good for two months, and remains quite homogeneous.

Yours truly,
ADAM GIBSON.

Leven, N.B., September 6.

The Preparation of Tincture of Strophanthus.

SIR,—I only reached the Conference last week late on Tuesday afternoon, an unforeseen engagement having called me to the South on the previous day, alike too late either for hearing Mr. Elborne's report on strophanthus, or for reading my own paper upon the same subject. To those few who have had the opportunity of perusing the two papers (and amongst those who have read mine is Dr. Thresh), it must appear a remarkable coincidence that their authors, who have been working quite independently of each other, should recommend precisely the same "new formula for tincture of strophanthus."

I will not trench upon your space so largely as to give quotations from the two papers side by side, but I may perhaps say that my paper describes in detail what I consider to be the best method of extracting the seeds—viz. firstly with petroleum ether, which removes the oil; secondly, after drying, with a little pure ether, which takes up the chlorophyll and a trifling amount of waxy resinoid matter; next, the dried marc is to be macerated in a small quantity (about 3 oz. per oz. of seed) of water for some hours; and, lastly, the moist residue is percolated with absolute or at least such strong alcohol in the requisite proportion to yield, per oz. of seed used, 20 fluid oz. of combined water-alcohol percolate of the correct alcoholic strength when mixed. By thus taking advantage of the laws of fluid-diffusion, I succeeded in completely exhausting the seeds of their toxic properties and bitterness, and it is very satisfactory to learn that Mr. Elborne arrives at a like result by identical means.

There is no real necessity for the ether part of the process, but when speaking upon this subject in March last at the Pharmaceutical Society I ventured to state that ether alone was not the best menstruum for extracting the oil (owing, amongst other reasons, to its taking away some of the active principles also), but that petroleum spirit was far preferable for this purpose. I was met at once with the alleged objection that the resulting tincture would be of a green colour in lieu of the orthodox pale brownish-yellow.

I am glad to note that Mr. Elborne has now become converted to the petroleum-spirit method, and has adopted my suggestion of nearly six months ago as one of the main points of his own paper.

In my paper there is recorded a point which may as well be mentioned now, although I may give the details more at length later on; it is this. In addition to the principles already discovered, the seeds—especially after they have undergone a peculiar fermentation—seem to contain a small proportion of a highly toxic body, giving some reactions not unlike those of strychnine. I am inclined to believe it to be an alkaloid, and have provisionally suggested for it the name *strophispine*.

I am, sir, your, &c.,
W. LASCELLES-SCOTT.
Chemical and Physical
Laboratories, Forest Gate,
Essex, Sept. 7.

Discoloured Cold Cream.

SIR,—The subject of discoloured cold cream has cropped up to my remembrance more than once in your correspondence columns. Allow me to suggest to "Carbuncle" and to "Bill" my belief that cold cream, according to almost any possible formula, if containing aq. rose, will be liable to become dirty-looking if steel knives be thoughtlessly used to it. About twenty years ago at the establishment where I was then assistant the same question that "Carbuncle" has put had to be raised.

I suggested the disuse of the steel knife. The hint was taken, and from that time forward there was no more complaint on the score of colour.

Since then I have seen elsewhere rose-water cold creams prepared in about as many different ways as any your readers suggest—with borax, liq. calcis, creta precip., vaselin alb., &c. Contact with steel has been always carefully avoided, and not once can I call to mind the slightest change in colour through keeping.

The necessity for avoiding metallic contact in the case of the more delicate mercurial ointments is generally recognised, but there are many other ointments about which I am afraid the bulk of chemists are not sufficiently careful. In the days of the former ung. plumb. subacet. comp. made with the liquor, I once kept that ointment in a jar with a tin lid. It used to turn pink very soon (I never employed other than bone or boxwood spatulas to it). At last I interposed stout brown paper between the lid and the jar, and from that time forward the pink discoloration was much longer in showing itself.

Yours truly,
JOHN THROSSELL.
Cambridge.

SIR,—Your correspondent must have used too much liq. potassæ. The quantity I have used for years is 3j. to about 24 oz. I have kept some for at least eleven months, and find it quite as sweet as when it was mixed; but it must be borne in mind that the liq. potassæ must not be added until the cold cream is entirely cool.

Yours,
BILL. (151/62.)

Blaud's Pills, B.P.C.

SIR,—I send you half-a-dozen Blaud's pills which I made last May. My process is identical with the B.P.C. form, except that I use a little heat at the end of the process to further the decomposition of the salts.

The pills were varnished, but have shrunk evidently; they have been kept in a warm place—perhaps that accounts for the shrinking.

Yours faithfully,
H. E. CULLWICK.
Harrogate, September 6.

[Mr. Cullwick's pills are not hard, and the mass is still green and apparently free from oxidation. This is the first testimony we have received of the value of the B.P.C. formulæ. It would be well if those who use the formulæ would let us know how they succeed. We understand that the Committee will consider anything of interest brought under their notice.]

The Wanted Stove.

SIR,—In reply to "Calore," I think that Thos. Fletcher's (Warrington) low-temperature burner will be what he requires. Having seen one in practical use for five years for such

purposes as desiccating iron, boiling water, making ointments, drying-down extracts, salts, &c., and with a small kettle of water placed on it heat is obtained sufficient to keep a fair-sized shop warm in winter. I can safely say that it will fulfil all requirements in a chemist's shop, as with it can be obtained a complete range of temperature from a gentle current of warm air to a clear red heat. One of the most important features is its compactness, as it will stand at the end of a counter if placed on a piece of zinc or other metal, and may be fed from an ordinary gas-burner.

The Brook, Liverpool.

W. J. R. (152/74.)

SIR,—If your correspondent "Calore" will invest in one of Fletcher's No. 2 Asbestos Cosy Stoves, he will not regret it. It will boil a kettle of water on top, cook a chop in front, and raise the temperature of a room 20 feet square 10° in one hour.

The consumption of gas is 14 feet per hour, I believe. I have one that has been in use two-and-a-half years, and am very pleased with it. When lighted, it looks very cheerful, the asbestos being in one glow.

Handsworth, September 3.

Yours truly,

C. F. JARVIS.

The Breakdown of the Irish Pharmacy Act.

SIR,—For the information of many of your readers I would like to say that the recent prosecutions in Belfast were not brought by the Pharmaceutical Council, Dublin, but by a few local pharmacists, who evidently would like to have the drug business entirely to themselves, although they well know that the "chemists and druggists" of the present are equally qualified as themselves for the sale of poisons, &c.

Yours truly,

AN OLD CHEMIST. (155/54.)

LEGAL QUERIES.

34/153. *R. S.*—It is perfectly impossible to properly advise you about your Hop Tonic Bitters. In the first place, no one could judge whether yours is a colourable imitation without seeing the article as sold. Secondly, the whole question is before the High Court of Justice, and we cannot guess how it will be regarded when it comes on for trial. Unless your interest in the matter is a very large one, we should think you would save yourself trouble and time by abandoning anything which at all approaches colourable imitation.

46/153. *A Subscriber.*—We believe the Pharmaceutical Society do not now claim for their members or for pharmaceutical chemists the exclusive right to use the word "pharmacy" as applied to a chemist's shop. The claim, we think, was once put forward, but we should not think it was a tenable one.

62/152. *Cymric.*—We should think a conviction under the Sale of Food and Drugs Act could be obtained for selling diluted acetic acid as "white wine vinegar."

32/152. *Scalpel.*—We do not think the title you have chosen would be regarded by the Court as an infringement of the trade-mark you name. This would partly depend, however, on whether the wording of the label and the general style of get-up of the article should closely resemble the other.

2/152. *Anxious.*—The premium paid with an indoor apprentice depends on the advantages offered. In country and agricultural districts we should say it varies from 20% to 100%. The period should not be less than three years nor more than five years. A lad ought to be earning money after three years. An outdoor apprentice in an ordinary country business does not usually pay a premium. It is a good plan for him to go for a month on trial before binding him, but we never heard of a deposit being paid in such cases.

27/275. *A. G. S. O.* asks:—"If a man having a wife and four children die without will, how does the law say his pro-

perty shall be disposed of?" Any real estate goes to the eldest son, but personal property is divided, one third to the widow, and two-thirds in equal portions to the children. The children of any deceased child of the intestate would take the share of their parent in proper proportions.

M. H. J. (47/155) and *Antacid* (156/69).—To register a label as a trade-mark you must first obtain an application form from the Trade Marks Office, Southampton Buildings, Holborn (5s.). You will have to supply blocks of the trade-mark for advertisement, and, if the registration be allowed, a further fee of 1*l.* Agents advertise in this journal who will do all the business for you.

23/155. *Hopeful.*—The widow can carry on the business if she is executrix, administratrix, or trustee. But she must employ a qualified manager.

DISPENSING NOTES.

[The opinion of practical readers is invited on subjects discussed under this heading.]

Extractum Ergotæ Liquidum.

SIR,—I feel inclined to take exception to some of the remarks "Cullercoats" makes upon ext. ergot. liq.

He says he refused to dispense a prescription containing this drug because it was prescribed in 5*j.* doses. This is a remedy that might be used for improper purposes; is a poison; and for these reasons very properly ought we to exercise a due amount of caution whenever we dispense it; but I fear "Cullercoats" has carried his caution to timidity's side and committed an error of judgment.

I have known chemists who refused—made a regular point of refusing—to sell poisons in ordinary course of retail trade, for no other reason than the fear of the possible consequences. A dispenser who cannot bear the responsibilities should not undertake the duties or share its rewards. In my experience ergot holds quite an exceptional position, both as regards its dosage and its wide range of therapeutic use. It does not become us as dispensers, when one of those exceptional prescriptions is presented to us, to turn upon the prescriber and say the B.P. says, "Thus far shalt thou go, and no farther."

I have not found it an uncommon thing to have prescriptions ordering 5*j.* doses of the fluid extract, and beyond satisfying myself of the genuineness of the prescription, have not hesitated to dispense without further question.

A day or two ago I dispensed the following:—

Ext. ergotæ liq. 3*j.*

Sig.: A dessertspoonful every four hours.

Again, "Cullercoats" says he "marked the ergot on the recipe thus, x"—a most improper proceeding, I should say. How is the next dispenser to know that this is not a mark made by the prescriber intended to call the dispenser's attention to the dose?

Yours respectfully,

D. S. A. (155/60.)

SIR,—"Cullercoats," I am afraid, has not had much experience with the above, or he would not have asked which was right—Squire or B.P. I have four medical gentlemen who invariably prescribe 3*j.* a dose, and two of them say they would never think of giving less than 3*j.* for an adult. I wonder what he would say if he got the following one to dispense, and perhaps at three in the morning:—

Ext. ergotæ liq. 3*j.*

Syr. aurantii 3*ss.*

Aq. cinnamomi 3*iss.*

M.

Sig.: 3*ss.* every two hours.

The late Dr. F. W. Moinet remarked in his lectures once that one could take 4 drachms with perfect safety.

Yours, &c.,

Dumfries, September 3.

A. D. CLARKE

SIR,—In answer to "Cullercoats" I have often seen ext. ergotæ liquid, B.P., given in 3j. doses, and should not hesitate to dispense such a dose, as I have known it given three times a day for several consecutive days.

Yours,

E. H. S. (156/33).

Quinine and Phenol in Pill.

SIR,—I should be much obliged if you could suggest a way of dispensing the following prescription :—

Acid. carbol.	gr. xij.
Quinine sulph.	" xij.
Ext. nucis vom.	" iij.
Pil. rhei co.	" xxiv.

M. Ft. pil. xij. Arg.

The difficulty being to get the mass dry. Crystal carbol. was used, and the mass was made up in various ways, but without any very satisfactory result. Any suggestion will much oblige.

DISPENSER. (154/9.)

[Carbolic acid and quinine liquefy when rubbed together just as camphor and chloral do.* A good pill is made by taking the dry ingredients of the pil. rhei co. Mix the carbolic acid with the powders, add the quinine and the extract, and mass with powdered tragacanth and a little curd soap.]

Illegible Prescription.—*G. W. Hodder.*—The third ingredient of your prescription is "Chlorodyne (Collis Brown's), 3ij."

MISCELLANEOUS INQUIRIES.

Books.

149/34. *W. C. Marshall.*—The publishers of Hillhouse's "Strasburger's Handbook of Botany" are Swan, Sonnenschein & Co.

155/53. *Meeching.*—Hoblyn's "Dictionary of Terms used in Medicine, &c." (G. Bell & Sons) is a good book, and a new edition is just out.

155/74. *G. A. G.*—Law's "Farmer's Veterinary Adviser" (12s. 6d.) contains good advice regarding pigs.

150/72. *D. B. Macdonald.*—"Squire's Companion." The latest edition is the 14th; price half a guinea (Churchill).

152/73. *J. J.*—Metric System.—Barnard Smith's booklet (Macmillan & Co. 3d.) We cannot answer your other query.

Devon (150/33) and *W. D.* (156/20).—**Gelatine Mucilage for Photographs.**—The following formula is a good one :—

	Oz.
Gelatine	2
Glycerine	$\frac{1}{2}$
Methylated spirit	2
Water	8

Soak the gelatine in the water until soft, then add the glycerine and dissolve on a water-bath. Then add the spirit, mix, and prevent its evaporation by covering the vessel.

150/46. *Bouquet.*—Your question is not sufficiently clear. Nickel-plated goods are now generally made by welding a sheet of pure nickel to a thick sheet of iron by means of a borax flux; the compound sheet is then rolled out to the desired thinness.

150/44. *Arbeitsam.*—You will get particulars of the Institute of Chemistry by applying to the secretary, Somerset House Terrace, W.C.

Effervescing Drinks.—Let "Ll," says a correspondent, try the effect of dropping say, 20 or 30 minims of sp. ar. arom. in the tumbler before adding the acid powder.

149/67. *Contributor.*—**Sticky Fly-papers.**—Several formulæ for the composition to spread on paper will be found in back volumes. The following is a good one :—

	Oz.
Gum thus	4
Linsced oil	$1\frac{1}{2}$
Honey	1

Melt and mix well, spread over sized paper while hot.

150/30. *Enamel.*—The only practical way to remove enamel from iron is by mechanical force.

2/150. *Detsingi* (Budapest).—**Lard Oil** is made by subjecting lard to hydraulic pressure in the cold. By this means the liquid olein of the lard is separated from the stearin. The oil is procurable. You cannot make it satisfactorily on a small scale. **Natural Petroleum** cannot be made colourless, although you may separate colourless oils from it by distillation. Some of the distillates which are coloured are purified by thoroughly agitating with from 1 to 2 per cent. of strong sulphuric acid. After the mixture settles the oil is drawn off and washed with solution of caustic soda and finally with pure water. Carbolic acid may be coloured red by exposing it to the air, or by adding to it a little alcoholic solution of fuchsin. The colour imparted by the latter means gradually fades, however.

150/10. *Ink.*—**Violet-black Ink**—The ink which you mention is understood to be a logwood ink containing an alum, probably roche alum. The following gives a good ink :—Dissolve $\frac{1}{2}$ oz. of extract of logwood in 18 oz. of water heated carefully until dissolved; allow to settle and strain. To this add $\frac{1}{2}$ drachm of common washing soda dissolved in 1 oz. of water, and lastly add gradually 15 grains of bichromate of potash dissolved in 1 oz. of water, stirring constantly. Add 1 grain of corrosive sublimate to preserve, and a little mucilage to thicken if necessary.

151/26. *Nemo.*—We must decline to give advice on questions of life insurance.

152/5. *L. O.*—We should not think it likely; the last edition is only a few months old.

152/3. *Cortex.*—**American Saffron.** Both the true saffron (*Crocus sativus*, L.), which is, or used to be, cultivated in Pennsylvania, U.S.A., and *Carthamus tinctoria*, or safflower, are known under this name. Safflower, in large doses, is said to be a laxative, its action closely resembling that of chamomiles. In the form of a warm infusion it has been given as a diaphoretic. **Mallow Leaves** (*Folia malvæ*) are official in Germany. They are used as a demulcent, like marshmallow. **Hydrangea Root**, of *Hydrangea arborescens*, L., has been found useful, it is said, in gravel and its associate disorders.

NOTES BY "HEDER."

A Chemist's Stove.

To get a combination of a bright and cheerful fire with the utility of a drying stove, I would suggest the fixing of one of Fletcher's gas-fires of incandescent asbestos into the front of a sheet-iron or brick stove. A sheet-iron door to enclose the gas-fire when the oven is heated specially may be made movable. If the burnt air and gases from the fire are objectionable, the stove must have an inner casing. In any case there must be an exit flue.

A Relic of Antiquity.

A short time ago I bought a small stone mortar which was disinterred at Herculaneum and brought to this country by an army-surgeon. Its dimensions are: height, $8\frac{1}{2}$ in.; width at base and brim, 4 in.; waist, $\frac{1}{2}$ in. less than brim; hollow, 3 in. by $2\frac{1}{2}$ in. deep. I have every reason to think it a genuine article.

45/150. *Galenorth*.—The term "dia codeion," of which your "diacordial" is a corruption, is Greek for "from a poppy-head." Syrup of poppies is usually given for it, though in some parts a flavour of essence of peppermint is added.

42/154. *Subscriber* would like to know what are the usual arrangements made between medical men and chemists when the latter agree to dispense the prescriptions of the former at a uniform charge, especially with reference to rate of remuneration, repetition of prescriptions, &c.

11/277. *Bots in Ponies*.—*H. S.* recommends $\frac{1}{2}$ -drachm doses of pulv. antim. tart. in bran mash three consecutive days or nights.

The Honey Harvest.

155/25. *W. R.* writes from Yorkshire (West Riding) that the statement in our last Market Report with respect to the abundance of the Westmoreland honey crop in no way represents the state of things in his part of the country. "Being a bee-keeper myself," our correspondent states, "and also seeing the reports in the bee journals, I find that the honey crop is much below the average, on account of the hot dry season. I also hear from American sources that in some States where there has been a splendid crop in former years there is hardly enough to winter the bees on, so we may expect prices up instead of down. I do not contradict the Westmoreland report; I know nothing to the contrary, but it is an exception, not the rule."

273/18. *Mr. W. S. Corder* (North Shields) writes:—"Your correspondent 'Enquirer' will, I think, obtain the information that he wants as to Unsinkable Cloth from Messrs. Ireland & Co., woollen manufacturers, Kendal, who a few years ago made it the subject of a patent which they worked on a commercial scale."

153/31. *Constantinus*.—The Neuralgic Powder which you send consists of peroxide of iron, rhubarb, and cassia. We do not detect camphor in it. Try the following formula:—

					Grs.
Ferri peroxidi	..	..	..	..	xij.
Pulv. rhei	..	..	..	..	iv.
Pulv. cassiæ	..	..	..	..	iiij.

M.

One every six hours.

Sanitas.—Referring to our reply to "Ajax," the Sanitas Company add: "'Sanitas' is the fancy name used as a registered trade-mark for some thirty preparations and appliances manufactured and sold by us. There is no one preparation known as 'Sanitas.' Any further information that may be desired by 'Ajax' will be furnished on application to the 'Sanitas' Company (Limited), Letchford's Buildings, Three Colt Lane, Bethnal Green, E."

152/59. *J. N. D.*—You will find two formulæ in last volume, pp. 459 and 488.

** A large number of letters and replies to correspondents are held over until next week.

Trade Notes.

MR. M. WOOLF, manufacturer of druggists' sundries, has removed from 83 Clifford Street, Lozells, to 90 Bath Row, Birmingham.

MESSRS. LEECH, WELCHMAN & CO., of 39 Lime Street, E.C., announce that they have dissolved partnership, *Mr. H. G. Welchman* liquidating the business of the late firm.

MR. JAS. P. LEECH, late partner with Messrs. Leech, Welchman & Co., has commenced business at 39 Lime Street, E.C., as a general merchant and commission agent, under the style of Leech & Co.

MR. GUSTAVUS MÜLLER, who has been for many years engaged with Messrs. L. M. Bauer & Co., has now commenced business on his own account in drugs, spices, and drysalteries, at 14 Harp Lane, E.C., under the style of Müller & Co.

THE "SIMPLEX" TYPE-WRITER.—We have made a trial of this little machine, and find that it works very simply, and that a few hours' practice is all that is required to make one expert in its use. The type-writer will be useful to chemists for many purposes other than label-writing. The agents have premises at 56 Queen Victoria Street, and they make an announcement in this issue.

MESSRS. BURROUGHS, WELLCOME & CO. have commemorated the recent meeting of the Pharmaceutical Conference by presenting to each member who was present a handsomely mounted photograph of some interesting spot in or around Manchester, as a souvenir of the Conference. Those who attend the meeting get all the good things, it seems. The firm presented a similar souvenir to every medical man who attended the recent meeting of the British Medical Association.

MR. ANDRÉ ICARD, OPIUM EXPORTER, OF SMYRNA, has sent us a collection of his circulars on the opium market, bound in book form, and covering the period from June 30, 1886, to June 24, 1887. The pamphlet, if it may be so called, is well worth perusing. Almost day by day it describes the position of the markets in Asia Minor, the rumours, at first faint and then growing in intensity, concerning the coming crop, and finally the gathering and the yield of this season's opium. In a French which, though better than that of Stratford-atte-Bowe, is often more expressive than grammatical, *Mr. Icard* sums up the gist of the communications sent to him by what appears to be a very well organised staff of native agents in the opium-growing districts. The Karahissar agent especially must be credited with having prophesied the coming failure of this season's crop many months in advance, with a persistency worthy of Old Moore himself. The Karahissar worthy might be now looking back with pride upon the accurate fulfilment of his prognostications, were it not that, in the very hour of triumph, at the end of May, he suddenly, and most unfortunately, shuffled off his mortal coil—a circumstance to which *Mr. Icard* regretfully alludes. Altogether the collection of reports offers a much more interesting reading than its first aspect would indicate.

NEW COMPANIES.

BRITISH PATENT PERFORATED PAPER COMPANY (LIMITED).—Capital 25,000*l*. An issue of 19,904 shares of 1*l*. each is now announced. Perforated toilet papers are the staple of the company's business.

"BRAZILIAN EXTRACT OF MEAT AND HIDE FACTORY (LIMITED)".—Registered with a capital of 200,000*l*, in shares of 5*l*. each. Object, to carry on, in the empire of Brazil or elsewhere, the business of acquiring and slaughtering cattle, and converting the carcases into various articles of commerce, and to buy, sell, prepare for market, and deal in cattle of every description, and articles of commerce of every description into which the carcases of cattle can be converted.

JAMES LEWIS & COMPANY (LIMITED).—This company was registered on August 27, with a capital of 5,000*l*. in 10*l*. shares, to purchase proprietary rights to certain patent medicines, and the business in connection therewith carried on by *Mr. James Lewis*, of 60 Woodville Road, Cathays, Cardiff. The subscribers are—*W. Harpur*, C.E., Cardiff, 1 share; *J. Jenkins*, Cardiff, chartered accountant, 1; *T. T. Masters*, Cardiff, clothier, 1; *H. Cambridge*, Cardiff, marine surveyor, 1; *J. Lewis*, Cardiff, chemist, &c., 1; *W. F. Gillett*, Cardiff, architect, 1; *W. B. Francis*, Cardiff, clerk, 1. The subscribers are to appoint the first directors.